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The OIL and GAS JOURNAL

PRODUCING REFINING ENGINEERING MARKETING

Published Every Thursday TULSA, OKLAHOMA, MAY 17, 192[illegible] $6.00 a Year

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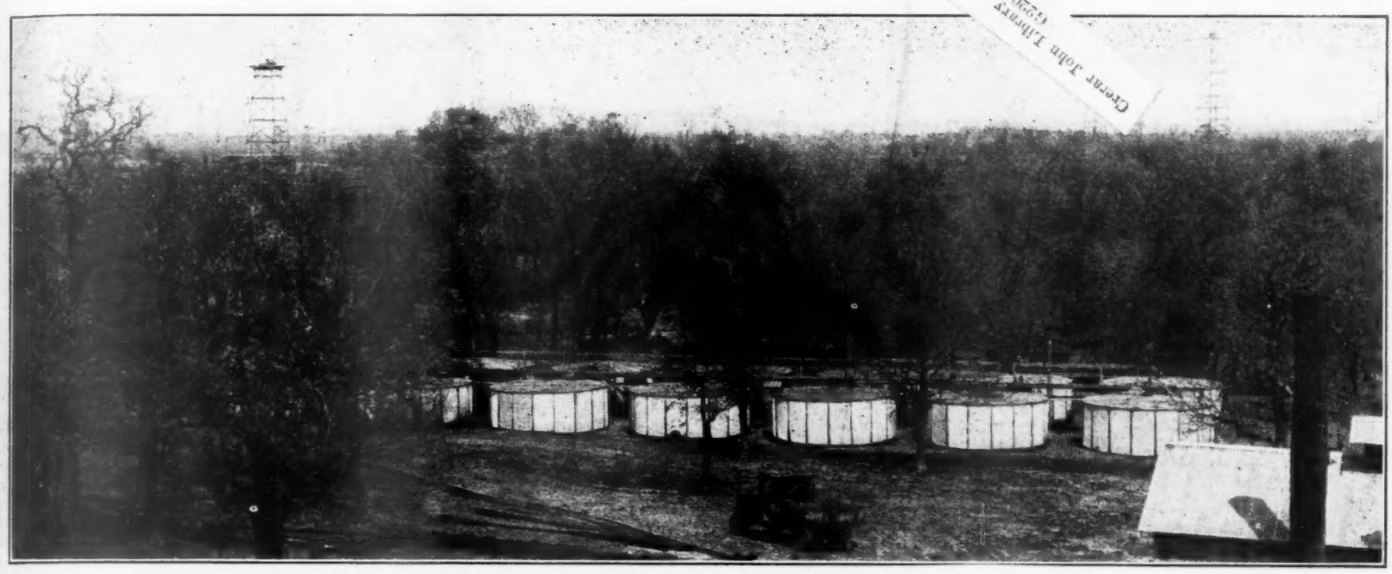

The illustration shows a battery of 14 low-type 500-barrel MALONEYS on the R. Jackson Farm at Little River, Oklahoma.

MALONEYS COMBINE BETTER MATERIALS WITH SUPERIOR DESIGN—

The advantages of exceptional durability, tightness, strength and convenience, as found in MALONEY Bolted Steel Tanks, are gained through our use of better materials and through our patented and exclusive features of design.

The sheet steel used in MALONEYS is the most durable known—rust resisting Keystone Copper Steel. Our specially heat treated bolts are 35% stronger than ordinary bolts, having a tensile strength of 90,000 pounds. Reinforcing angles, channels and strips are high grade, high carbon steel.

Our gasketing is a specially developed cloth inserted, pliable rubber material. Our Gaso cement for dressing seams resists the action of gasoline and lighter oils. Painting is with Maloney special pearl gray paint.

MALONEY design provides a patented "crimp" at seams and joints which causes parts to fit with accuracy. Seams are rigidly reinforced. Decks are supported with strong angles, with cantilever trusses on 1500-bbl. and larger sizes. Cleaning out plates are set flush with bottoms. We use the best obtainable valves and thief-hatches.

"Alone in Quality"

MADE OF KEYSTONE COPPER STEEL

MALONEY TANK MFG. CO.

Tulsa, Okla., U. S. A.

Distributors at All Principal Petroleum Points

MADE OF KEYSTONE COPPER STEEL

Howell Aluminum "3-in-1" Vacuum Pressure Valve and Thief Hatch—The BEST and LATEST Deck Equipment—POSITIVE Safety

Sizes: 12 to 10,000 Barrels

Packed in Steel-Bound Crates for Export

MALONEY

MALONEY PATENTED BOLTED COPPER-STEEL TANKS

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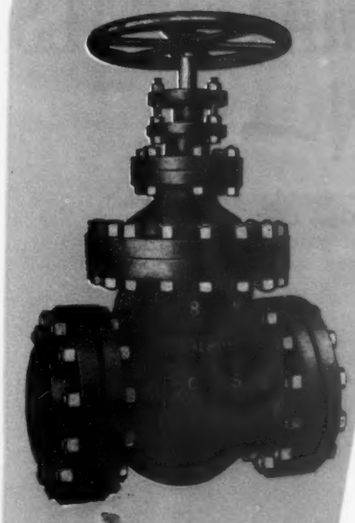
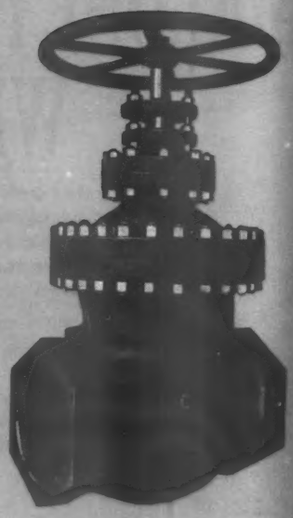
KEROTEST

KEROTEST





You Take Nothing for Granted

Kerotest Drilling Valves on the Casing—*Kerotest Flow Line Valves* on the Christmas Tree—then you are set for any contingency that might arise and know that the Kerotests will stand the strain regardless.

Each Kerotest Valve regardless of size, type or rating is individually tested and factory proven by the Pittsburgh Testing Laboratory.

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OIL WELL SUPPLY COMPANY
Branch Stores in all Oil Fields

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KEROTEST MANUFACTURING COMPANY
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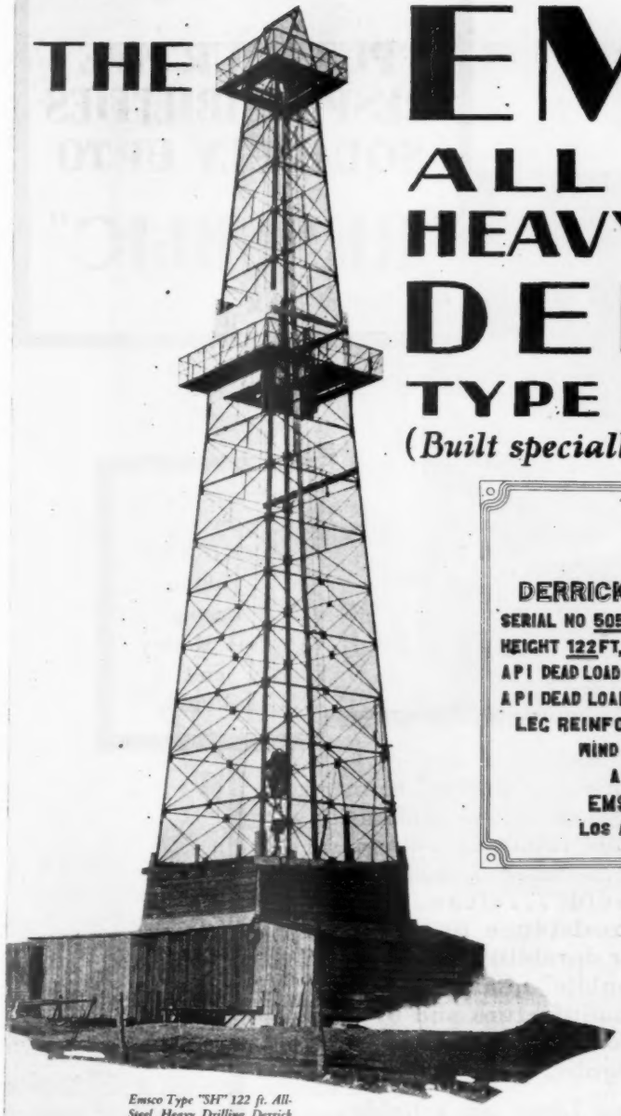
THE EMSCO ALL-STEEL HEAVY DRILLING DERRICK

TYPE "SH"-122 FT.

(Built specially for Mid-Continent Drilling)



EMSCO

DERRICK SPECIFICATIONS JAN. 1928

SERIAL NO 5056 SIZE NO 1 TYPE SH WEIGHT 40540 LBS
HEIGHT 122 FT, BASE SQUARE 24 FT, WATER TABLE OPENING 5-6
API DEAD LOAD CAPACITY WITHOUT LEG REINFORCING 323800 LBS
API DEAD LOAD CAPACITY WITH LEG REINFORCING 627000 LBS
LEG REINFORCING, TUBULAR, SIZE 6"-20 LB DRILL PIPE
WIND LOAD CAPACITY 70 MILES PER HOUR
API GIN POLE CAPACITY 6500 LBS
EMSCO DERRICK & EQUIPMENT CO.
LOS ANGELES, CAL. U.S.A. HOUSTON, TEXAS

Emsco Type "SH" 122 ft. All-Steel Heavy Drilling Derrick at Lovell, Oklahoma

Emsco steel equipped wells are safe

EMSCO
A Complete Line of Better Oil Well Equipment

Essential Features of Construction

[1] Extremely high dead-load capacity of un-reinforced tower, due to 6″ x 6″ x ½″ main leg angles.

[2] Seven-foot main leg angles facilitate easy handling and erection.

[3] Leg sections anchored to foundation independent of base beams.

[4] Provision made for independent bolting of base beams to leg anchor clip. Base beams can be installed or removed without affecting leg anchor bolts.

[5] A.P.I. standard derrick dimensions maintained throughout.

Complete specifications and details of construction furnished on request.

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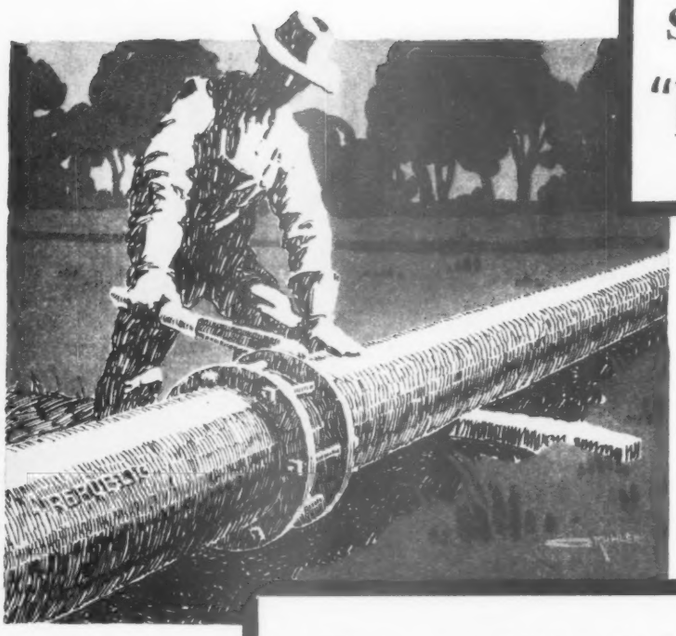
Houston — Texas
New York Office: 150 Broadway
Factory Branch at Tulsa

The Oil and Gas Journal, issued weekly by The Petroleum Publishing Company, 114-116 West Second Street, Tulsa, Oklahoma. Subscription price $6.00 a year; 15 cents a copy. Entered as second-class mail matter December 15, 1911, at the post office at Tulsa, Okla., under the Act of March 3, 1879

PUT YOUR PIPE RESPONSIBILITIES SQUARELY UP TO "REPUBLIC"



PRODUCTS
Tubing
Casing
Line, Rotary and Drill Pipe

THE responsibilities of oil country pipe are taken into consideration when Republic tubular products are being made. Strength . . . uniformity . . . sound welds . . . clean, perfect threads . . . resistance to corrosion necessary for durability . . . these are innate "Republic" qualities, assured by careful manufacture and by tests and inspections more rigid even than standards require.

Republic Pipe Lines are reliable . . . they can be trusted to "carry on" trouble-free through the years.

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PIPE & CASING

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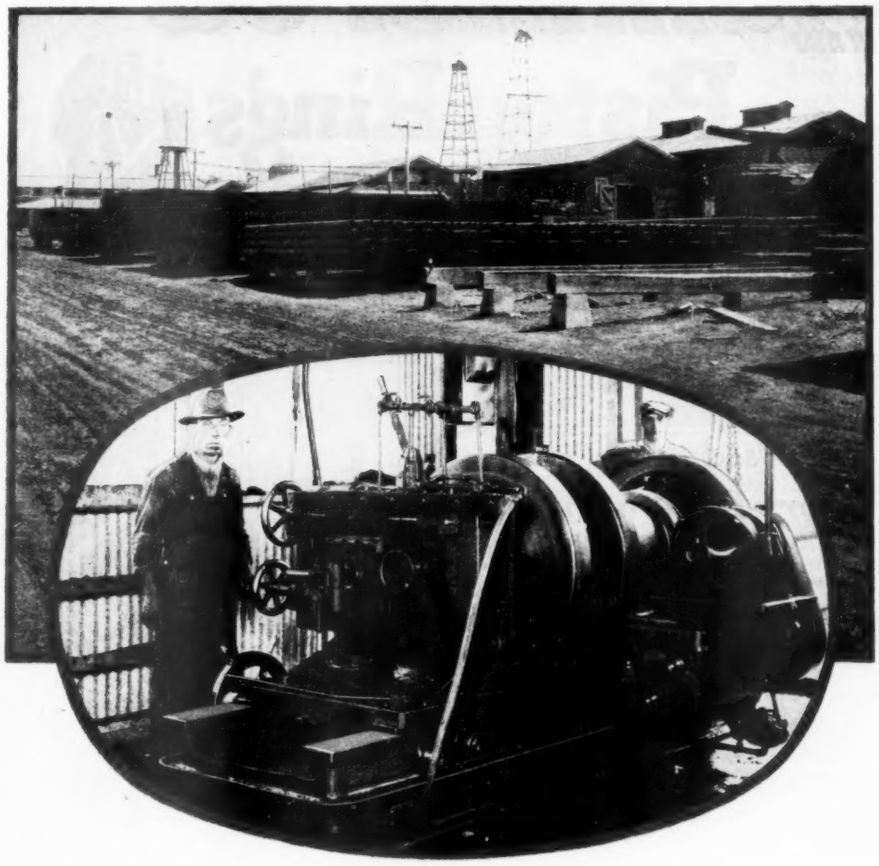
SOUND BUSINESS



The Producers Pipe & Supply Company of Tulsa, Oklahoma, gain and hold customers through the first class threads they cut on their 12″ Landis Pipe Threading and Cutting Machine.

They know that it is sound business to make satisfied customers by producing work of high quality. They know also that it is sound business to install the most economical and fastest operating pipe threading equipment possible. As in all shops where good threads, high production, and economical operation count, they use Landis.

It is entirely a matter of *distinctive design* that Landis Machines do better work, just as it is a matter of *distinctive design* that they are more economical to operate and give higher production than other pipe threading machines. They are doing it for hundreds of users.

Sound business urges you to equip your shop with Landis.

Write us today—it will pay you.

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WAYNESBORO, PENNA., U. S. A.

Detroit Office: 5928 Second Blvd.

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American Hammered Piston Rings

Individually cast, mechanically hammered to give lasting tension, particularly designed and adapted for Oil Field and other severe service.

Endorsed and used as Factory Equipment by---

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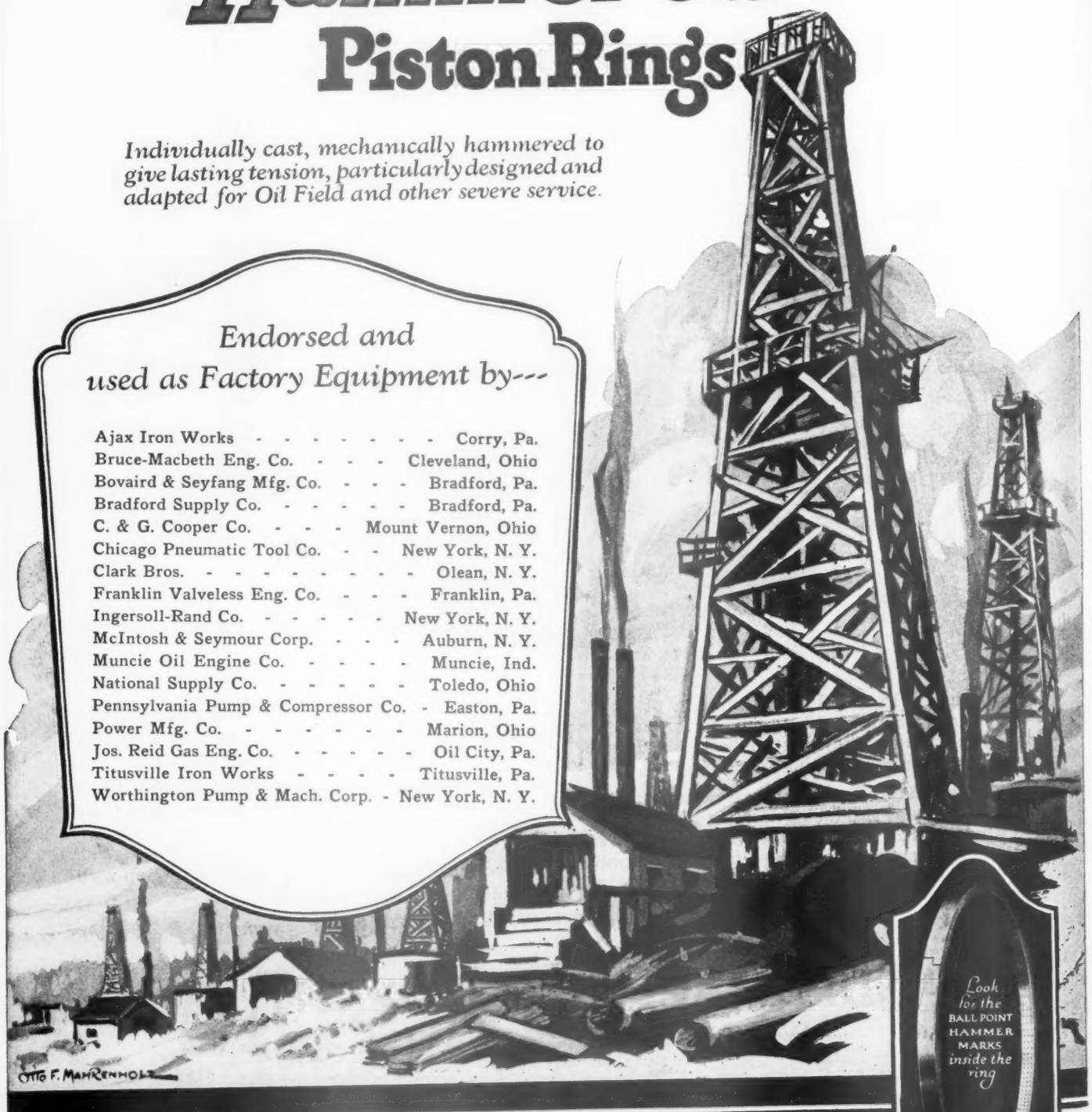
Power Mfg. Co.	Marion, Ohio
Jos. Reid Gas Eng. Co.	Oil City, Pa.
Titusville Iron Works	Titusville, Pa.
Worthington Pump & Mach. Corp.	New York, N. Y.



May be obtained from the above companies, or their selling agents, in standard sizes or oversizes.

Rings for any engine or compressor not listed above can be obtained direct from us.

The American Hammered Piston Ring Co. Baltimore, Md.

Derrick fallen, twisted machinery covers top of well. "Caterpillar" steps in, aiding fighters to extinguish the blaze.

Fighters & Protectors

The "Caterpillar" track-type tractor is constantly stepping into the breach in oil fields...fighting across roadless country with heavy machinery...moving derricks without dismantling...fitted with special winch, servicing and baling wells ...a powerful mobile unit found in the heavy jobs of oil fields...cutting costs...saving time.

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Applying the cure by disking under weeds near derricks and tanks.

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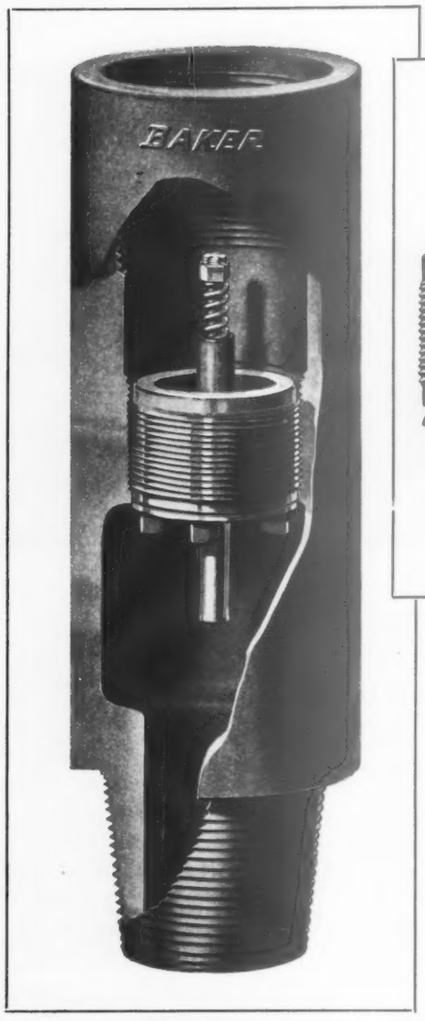
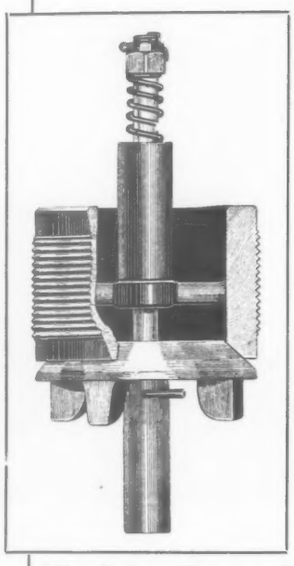
BAKER FLOATING EQUIPMENT WILL SAVE YOU MONEY



The Baker
Drill Pipe Float



The Baker Patented
Valve Assembly

Cut Costs
with the
BAKER
DRILL PIPE FLOAT
with the
PATENTED VALVE ASSEMBLY

A good many experienced operators have found that the Baker Drill Pipe Float will actually pay for itself in a short time out of the savings it effects on wire lines, brake bands and other equipment. We know your experience will be the same.

But money saved is only one of the advantages to be gained by its use. You can operate the longest string of drill pipe in absolute safety with the Baker Drill Pipe Float in the string. The patented valve assembly allows free circulation all the time. It is always readily accessible for inspection. Cannot hang up or plug the string.

Be up to date—save money—play safe with the Baker Drill Pipe Float. There is no substitute for Baker efficiency in this respect—as hundreds of operators have found!

SEND for the complete Baker catalog. It gives data and specifications of the Baker Drill Pipe Float and patented valve assembly, as well as the other tested tools in the Baker Line. Don't be without this reference book!

BAKER CASING SHOE COMPANY

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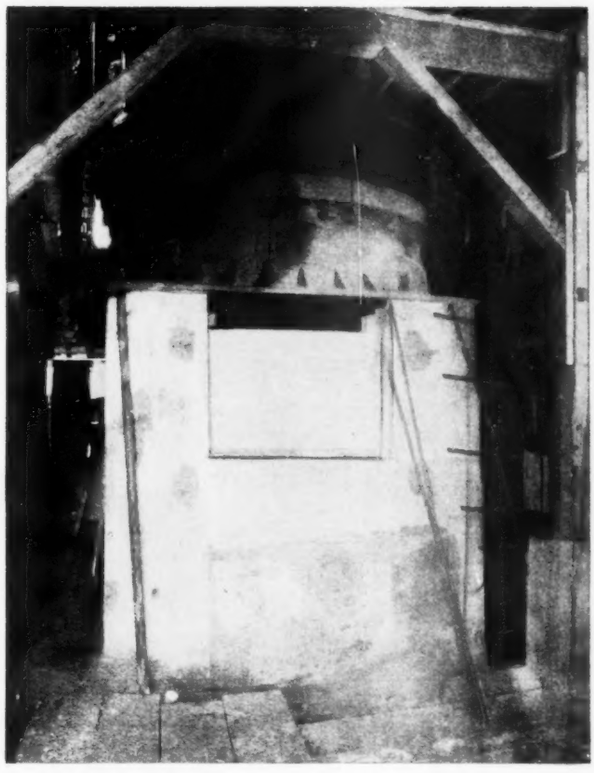
BASCO

708 Keystone Bldg., HOUSTON, TEXAS.

40-Ton Crusher Placed in Service *on* 2-Day Old Concrete Base



- - made with Quikard Cement

HAVING the rock crusher out of service meant tieing up the entire mine and mill of the Interstate Zinc and Lead Company, Baxter Springs, Kansas. So Quikard Cement was used in constructing the new crusher base. The base was finished at 9 o'clock one night and the crusher placed in service the second morning later. Quikard saved time and money by delivering its tremendous early strength making possible speedy construction with safety.

Quikard concrete can be used with safety from 20 to 36 hours after placing—saving you from 3 to 4 weeks on all concrete work. It is a true Portland Cement and mixed in standard proportions it produces 28-day strength in 24 hours, and develops increased strength thereafter! It requires no admixtures or accelerators. It not only meets U. S. Govt. and A. S. T. M. standard specifications for Portland Cement, but exceeds all strength requirements.

Floors, bases for machinery, powers, pumping equipment, booster stations, derrick piers, etc., made with Quikard can be used within 48 hours at the most.

Quikard is *not* quick-setting. It takes its initial and final set normally, allowing plenty of time for proper mixing, placing and finishing. It is worked just like Portland Cement, is unusually plastic and finishes quickly and easily. It produces an exceptionally waterproof concrete and is constantly uniform at all times. It forms a perfect bond with old or new Portland Cement concrete.

Write for full details about how this proved quick-hardening cement saves time and money in construction work. Packed in 5-ply paper bags, Quikard may be shipped in mixed cars with Ash Grove Portland Cement or Oilmax Cement.

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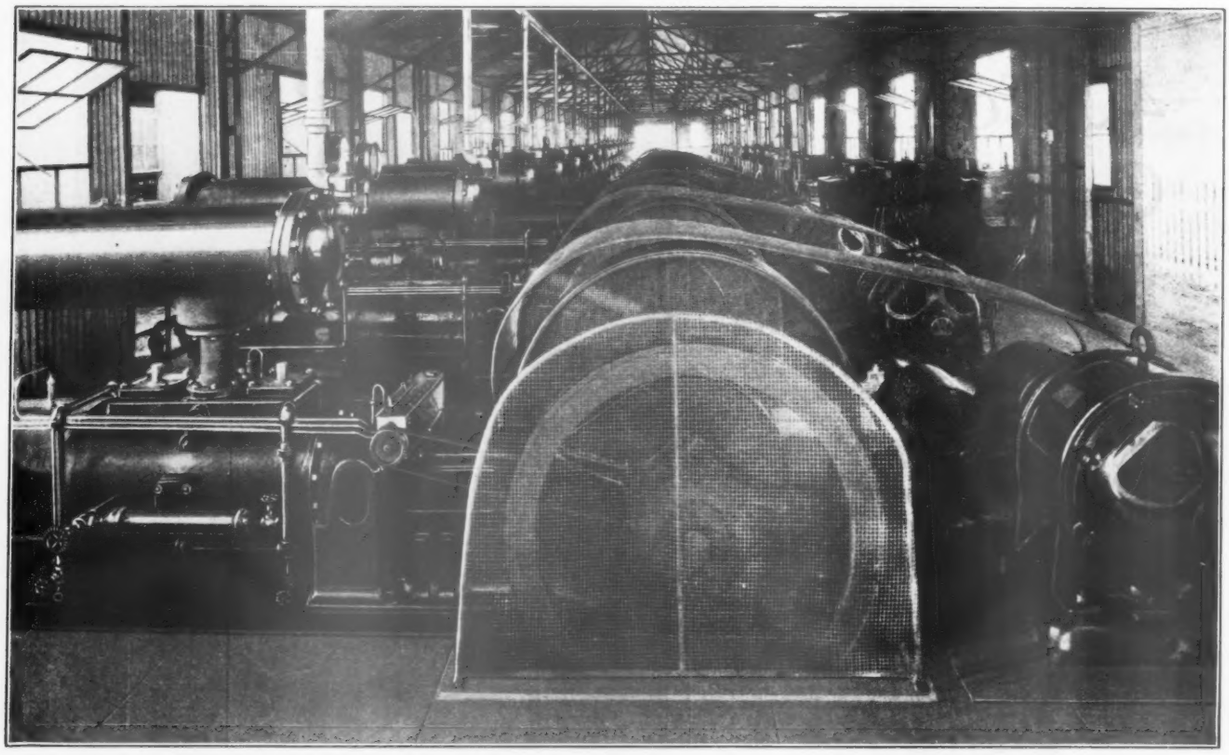
ASH GROVE LIME & PORTLAND CEMENT CO.
Founded in 1882
General Offices: KANSAS CITY, MO.
District Sales Office: OKLAHOMA CITY, OKLA.
Petroleum Bldg., Phone Maple 0642.

QUIKARD CEMENT

17



18—10½″ x 4¾″ x 12″ Worthington horizontal, belt-driven, tandem, two-stage, FEATHER Valve Compressors, installed by the Turman Oil Company, Tulsa, Oklahoma. Normal operating pressure 500-lb.

There is a difference...
in Compressors

FOR over 12 years FEATHER (Reg. U. S. Pat. Off.) Valves have proven the most efficient and durable type of valve yet devised for compressor use.

Worthington FEATHER Valve Compressors give the same satisfactory service in the oil field as they always have given in other industries. The eighteen duplicate units shown above are handling gas under difficult conditions and are operating successfully on timber foundations. The Worthington sleeve-type high-pressure piston rod packing prevents gas leakage and insures positive lubrication of the high-pressure piston rods. It also prevents any abrasive material lodging on rods in field work.

WORTHINGTON

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PUMPS

COMPRESSORS

CONDENSERS *and Auxiliaries*

OIL *and* GAS ENGINES

FEEDWATER HEATERS

WATER *and* OIL METERS

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WORTHINGTON

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by the new
RED LACQUER HANDLE
and by the
diamond trade-mark

TRADE MARK STILLSON REGISTERED U.S. PATENT OFFICE

which proves it's
GENUINE

MADE FOR MASTER CRAFTSMEN

The new Walworth Master STILLSON stands out like a lighthouse from all other pipe wrenches. You'll know it anywhere by its bright red handle, by Dan Stillson's diamond trade mark on the jaw and by its greater toughness, lasting strength and gripping power when it goes to work.

Design, weight, balance and price are the same as before. What the red handle identifies for you is a new hardness and toughness of steel from the tip of the handle to the last tooth in the jaw. And that's what counts for *you* when the new Master STILLSON goes on the job.

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Send for them
New tables of dimensions on 125-lb. and 250-lb. Cast Iron Flange Standards. Also Walworth Sigma Steel Bulletin No. 6-C, on new steel flanges and flanged fittings.

B&B Patentsteel Drilling Lines

Till the Well Comes In

Spud 'er in. Then let a B & B Patentsteel Drilling Line see the job all the way through.

B & B Patentsteel Drilling Lines, because of their strength, are preferred in the deep hole districts where a fishing job can eat up a tremendous amount of money.

You'll make good time with "Patentsteel." The line is full of spring. And we have laid the line "soft" to keep the kinks away.

B & B Patentsteel and other good drilling lines can be made promptly to order to suit conditions in your particular field. Write for Catalog K-2 and name of nearest distributor of B & B Drilling Lines.

Broderick & Bascom Rope Co.
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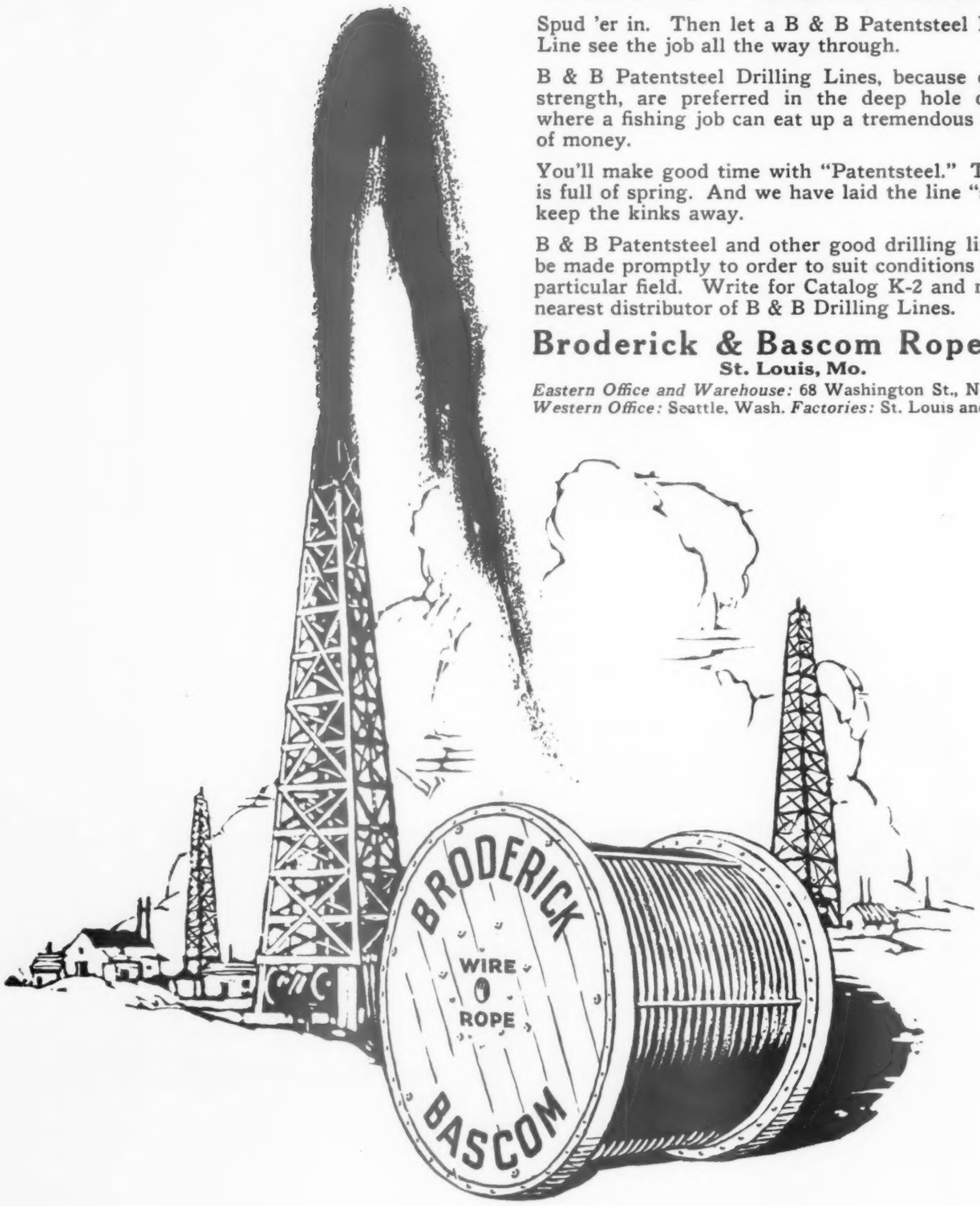
Eastern Office and Warehouse: 68 Washington St., New York
Western Office: Seattle, Wash. *Factories:* St. Louis and Seattle



Nuttall Hild Drives Prove Gear Quality

The success of the Hild Differential Drive has been phenomenal and its use has revolutionized rotary oil well drilling.

When the Oil Well Supply Company wanted someone to build a gear unit able to stand the terrific demands of deep rotary drilling, they came to the Nuttall Company. Exceptional manufacturing facilities, plus long experience in gear cutting and reduction unit manufacture has enabled us to build into the Hild Drives the wear resistant qualities so characteristic of Nuttall Pump Gear Units.

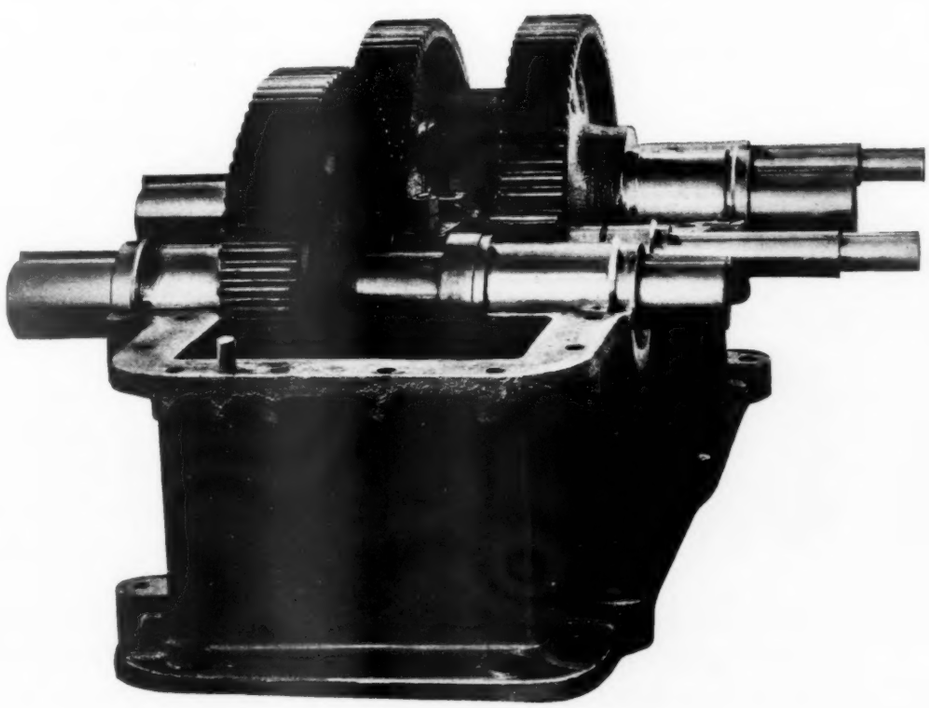
The gears in the Hild Drive are treated by the famous BP "Tough-Hard" process—the most successful ever developed for the treatment of gear steel. Hild Drives that have drilled as high as fourteen wells, show practically no wear on the gears—convincing proof of the gear quality.

Send for our Oil Well Bulletins

R. D. NUTTALL CO.—Pittsburgh, Pa.

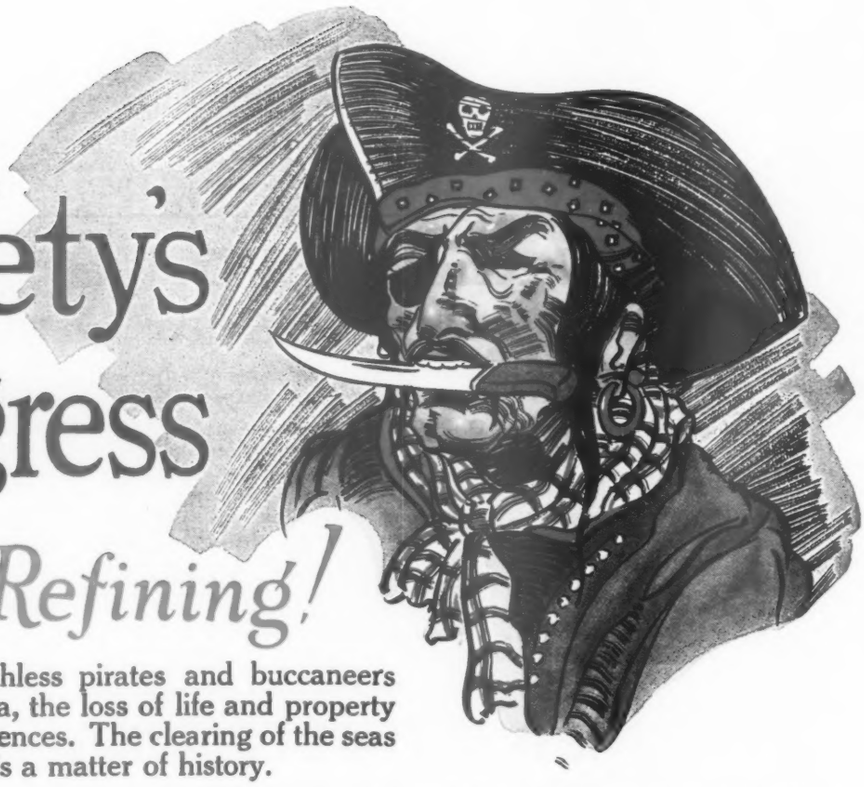
Further information can be secured from any office or branch of the Oil Well Supply Company, or from the District Offices of the Westinghouse Electric and Manufacturing Company.

Oil Well Supply Co., *Authorized Distributor*



Safety's Progress

In Oil Refining!



WHEN the ruthless pirates and buccaneers ruled the sea, the loss of life and property were daily occurrences. The clearing of the seas of these wasters is a matter of history.

Pirates of life and profit wrought havoc in the early stages of oil refining. In those days the breaking of valves and fittings on various lines resulted in leaks and fire.

Vogt valves and fittings have cleared the sea, so to speak, because they assure the utmost in strength and withstand the higher temperatures and pressures of modern oil refining. The use of these valves and fittings safeguards human life and property, because they are forged for this purpose, from the best grade steel.

Write today for catalog F-6

HENRY VOGT MACHINE CO.
(Incorporated)
LOUISVILLE, KY.

Manufacturers of: Oil Refinery Equipment, Drop Forged Steel Valves and Fittings, Water Tube and Horizontal Return Tubular Boilers, Ice Making and Refrigerating Machinery.

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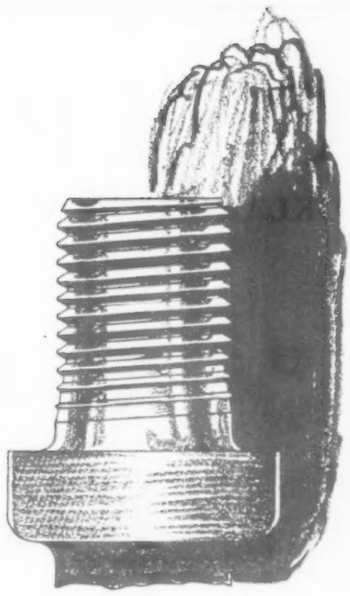
It takes LONGER



to make this kind of Sucker Rod

YOU EXPECT a lot out of your Sucker Rods—months, years, of service from *every* joint. By taking a few minutes *longer* to make each Axelson Rod we now put into them an appreciable amount of *extra* service—more than you expect from *any* Rod.

Not speed, but *precision* in manufacture, is our idea. It takes longer to complete a Rod in our factory—despite the fact that we have installed special machinery, designed for our exclusive processes.

THERE IS NO ECONOMICAL SUBSTITUTE FOR QUALITY

But we are elated at the *phenomenal increase* in the durability of Axelson Rods. An evolution of improvements is reflected—higher standards of mechanical perfections have been instituted—not over-night, but through constantly bettering our manufacturing practices over a period of years.

Heat treatment, for instance, is not a recent innovation in the Axelson plant. Years ago we experimented exhaustively with various methods and finally came to the conclusion that a Sucker Rod required an entirely distinct type of heat processing not possible by usual means. Ordinary present-day methods of heat treatment were long ago discarded by us for better and more effective *processes*—which incidentally are exclusively Axelson's.

On Full Production—Axelson A.P.I. and Axelson Standard Sucker Rods

Fortunately, by owning and operating our own research laboratories, we have been in a position to test every conceivable theory of metal composition, heat processing and design, so that we have never "jumped at conclusions," but have consistently improved our Rods—always ahead, never content to wait until competition neared.

Whenever a *genuine* improvement is conceived, Axelson will be the first to place it in your rods.

AXELSON MACHINE COMPANY
P. O. Box 337, LOS ANGELES
TULSA - ST. LOUIS - NEW YORK CITY
Mid-Continent Distributors . . . FRICK-REID SUPPLY CO.
Eastern Distributors . . . . . FRICK & LINDSEY CO.

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REFINED OIL
NAPHTHA
GAS OILS
PARAFFINE WAX
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FUEL OIL
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CYLINDER
ENGINE
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FLUID FUSION

Welded Cracking Stills

Technology of Fluid-Fusion Welded Stills.

P.I.W. Fluid-Fusion welded stills should not be confused in any way with ordinary welded products because Fluid-Fusion welding differs from ordinary welding in the following ways:

It is automatic and eliminates the variable human element.

It is a combination of chemical, mechanical, and electrical action.

It excludes such impurities as oxides and nitrides and bonds the parts together so perfectly and intimately that a joint can hardly be said to exist.

It eliminates the so called "zone of weakness."

It always withstands far greater tension and torsion stress throughout the weld area than the plate itself.

AN OPEN MIND

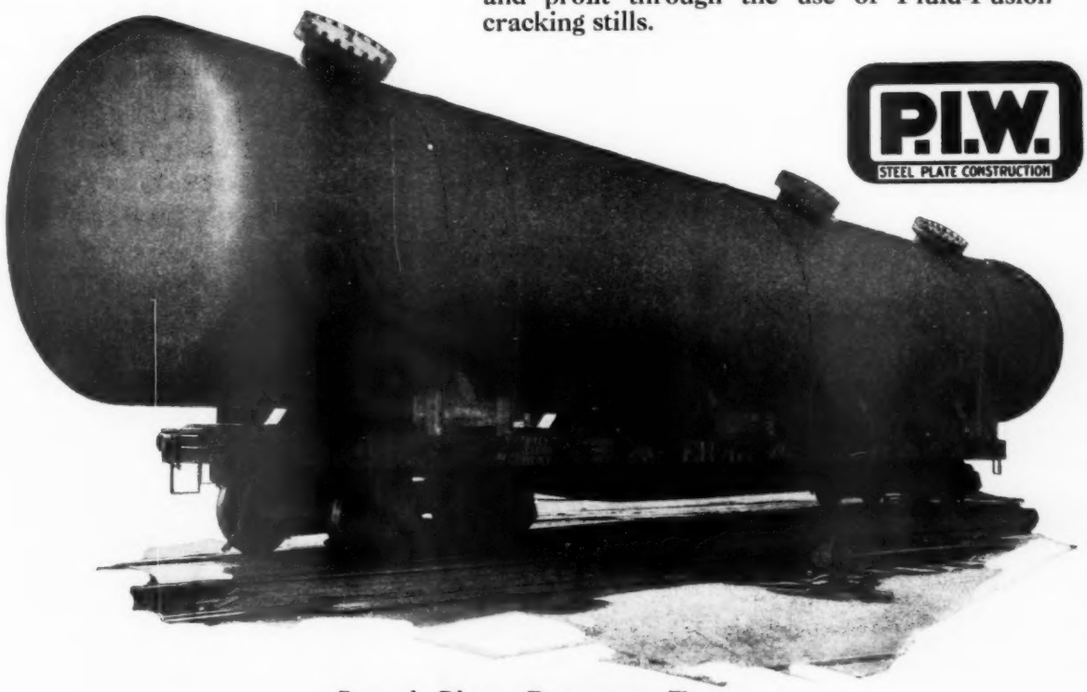
The progressive refiner in search of better equipment will not allow traditional distrust or preconceived notions to keep him from giving to Fluid-Fusion welded stills the open minded consideration these unusual features merit:

Wall thickness exceeding rolling mill limits.

Dimensions which tax transportation limits.

Bottle tightness under tremendous pressures and temperatures without expensive shutdowns.

The refiner can adapt the latest advances in petroleum technology to his greater efficiency and profit through the use of Fluid-Fusion cracking stills.



Branch Plant—Beaumont, Texas

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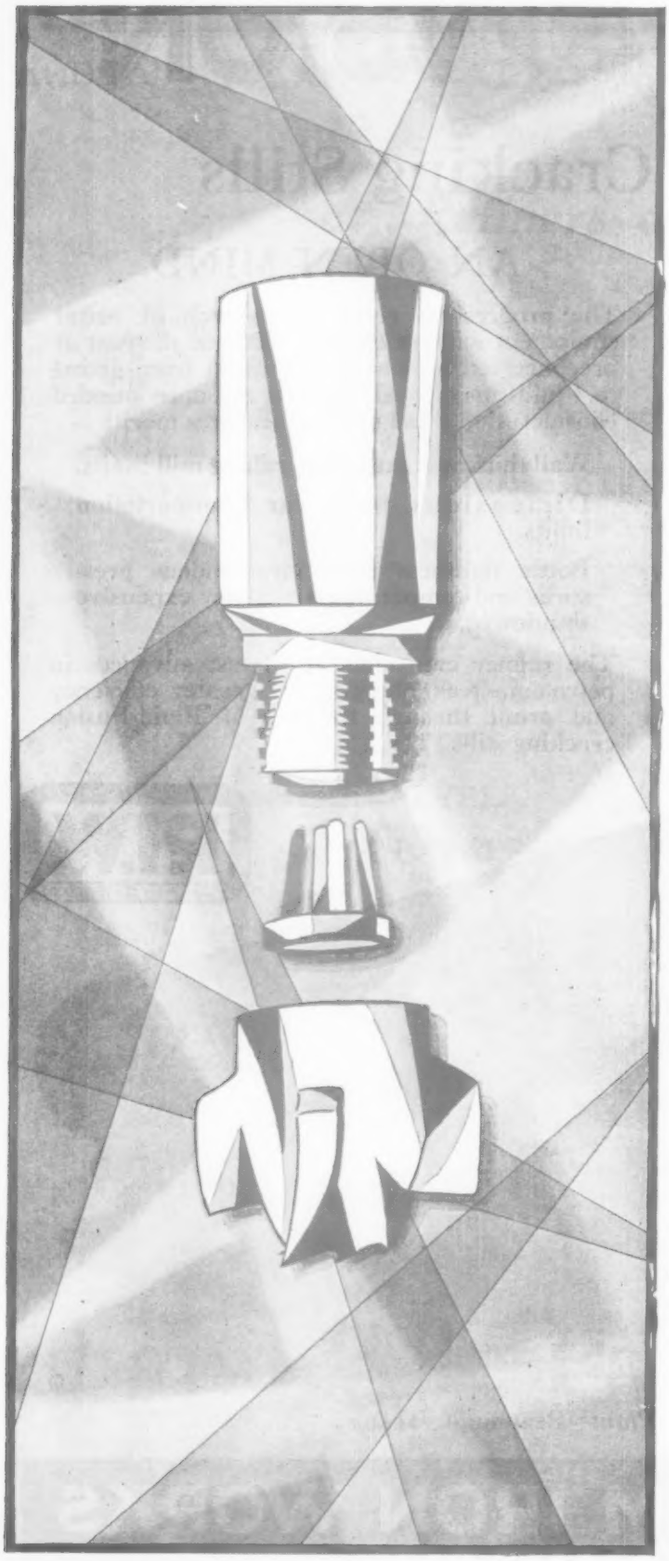

Almost anybody can make a core drill that looks like an Elliott. Lots of people have tried, but they can't imitate Elliott performance. ¶ Don't be deceived by "me-too" core drills. ¶ Have you the Elliott catalog?

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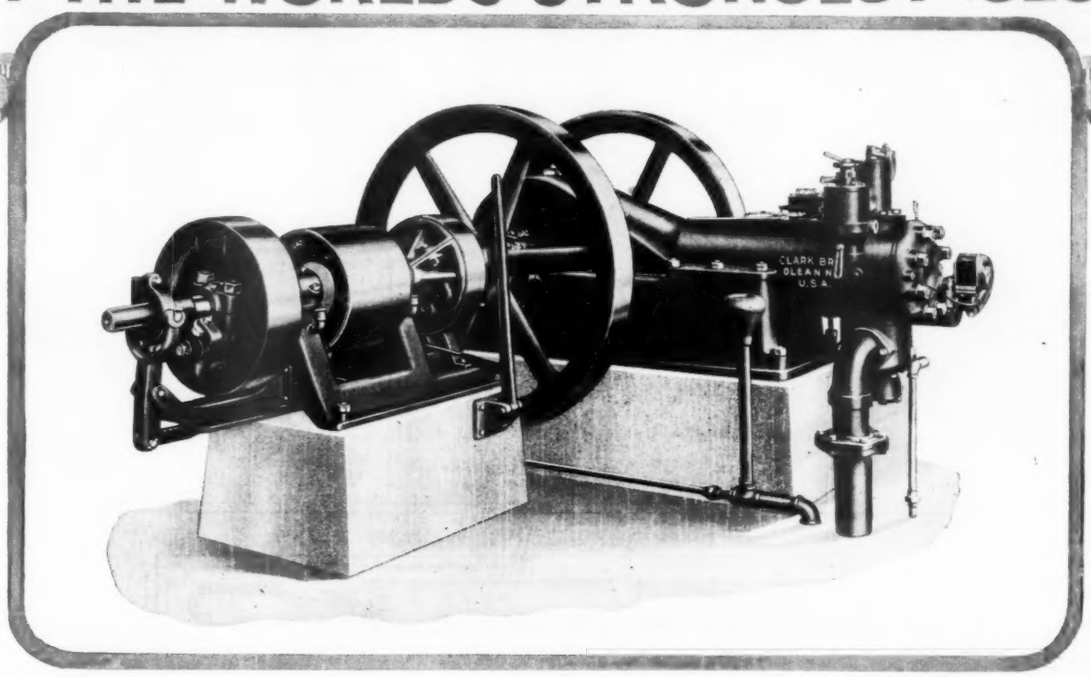
ELLIOTT
CORE DRILLS

CLARK PUMPING ENGINE

WITH THE WORLD'S STRONGEST CLUTCH



Built for Long-Time Satisfaction

The CLARK Pumping Engine and Clutch are built to serve for a maximum period of years with a minimum of upkeep expense. Scientific engineering, extra rugged parts, correct lubrication, quality materials and the most careful workmanship are combined to provide a unit on which the operator can depend without reservation.

The ENGINE has enclosed crankcase and bored main bearings with replaceable bronze-backed liners. Sight feed lubrication is provided at cylinder, wrist pin and crank pin. Main bearings are automatically chain oiled. Hardened cams, gears and oil pump run in an oil-tight box. The CLUTCH has double bearing to remove all strain from crankshaft. Lubrication is thorough and fool-proof. All parts accessible.

The CLARK Pumping Engine is 4-cycle, economical of fuel, easily started and not temperamental. 40 H.P., 275 R.P.M., 11″ bore by 20″ stroke. Sensitive, variable speed governor.

Ask for complete details regarding the money-saving durability of this pumping unit.

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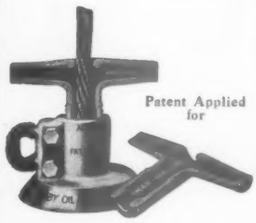
CLARK

Hook Wall Packers



Patent Applied for

Common style Larkin-Rigby Oil Saver, Showing Steel Hollow Top Grease Cup.

Automatic Style Larkin-Rigby Oil Saver

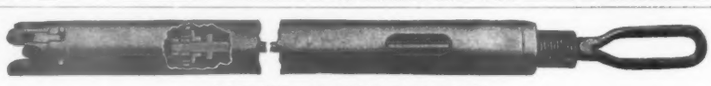
Patented 1914

California Style Larkin-Rigby Oil Saver

Drilling Bit Jars

Combination Anchor and Wall Packer—Conical Sleeve.

Larkin 3-in-1 Gas Anchor Packer



LARKIN'S IMPROVED SAND PUMP

The Larkin Line

Patent Hook Wall Packer—strongest, safest and most simple self-supporting wall packer on the market;

Special Gas Anchor Packers—with adequate protection of rubber for lowering in well under pressure;

Special Packers—for all types of special services;

Improved Sand Pump—20 feet long, flush outside, of uniform, Cold-Drawn "NATIONAL" Seamless Steel Tubing, equipped with Regular or Bit Bottom.

Never-Slip Pipe Grips—least expensive, swiftest and simplest device made for putting in casing.

Larkin-Rigby Oil Saver—the positive acting automatic latching and unlatching action, plus other exclusive advantages, make this a time, trouble and expense saver as well as an oil saver.

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Large stocks are carried which are always available for prompt shipment.

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Packers will be built especially to suit your particular requirements.

Complete line of Drilling and Fishing Tools for sale and for rent.

Buy The Larkin Line at any of the leading supply stores.

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Our Bulletin No. 30 describes *The Larkin Line* Write for it.

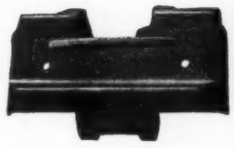
Sheaves, Bits, Cutters, Chains, Wheels, Drive Bushings

all last longer and eliminate maintenance—if made of AMSCO Manganese Steel

CROWN AND CASING BLOCK SHEAVES

SPROCKET WHEEL FOR HOLT OR BEST TRACTORS

SOLID OR SPLIT SPROCKET WHEELS



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—used in connection with Miller & Fisher drilling system.

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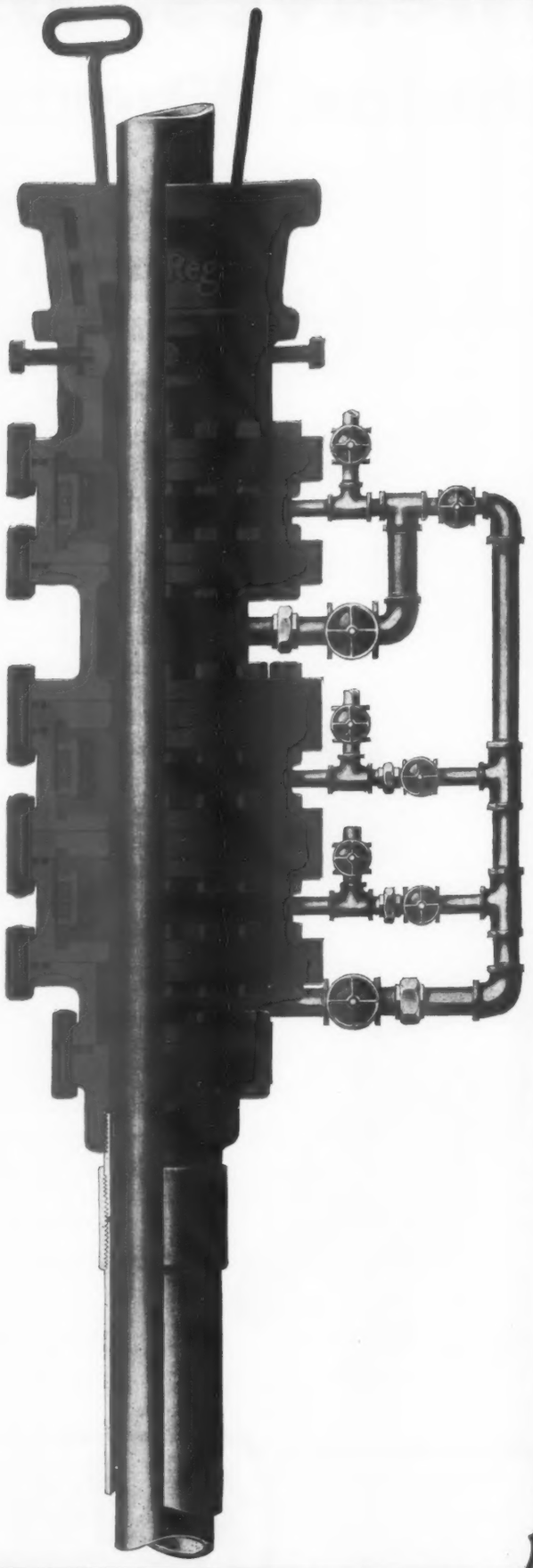
Patented



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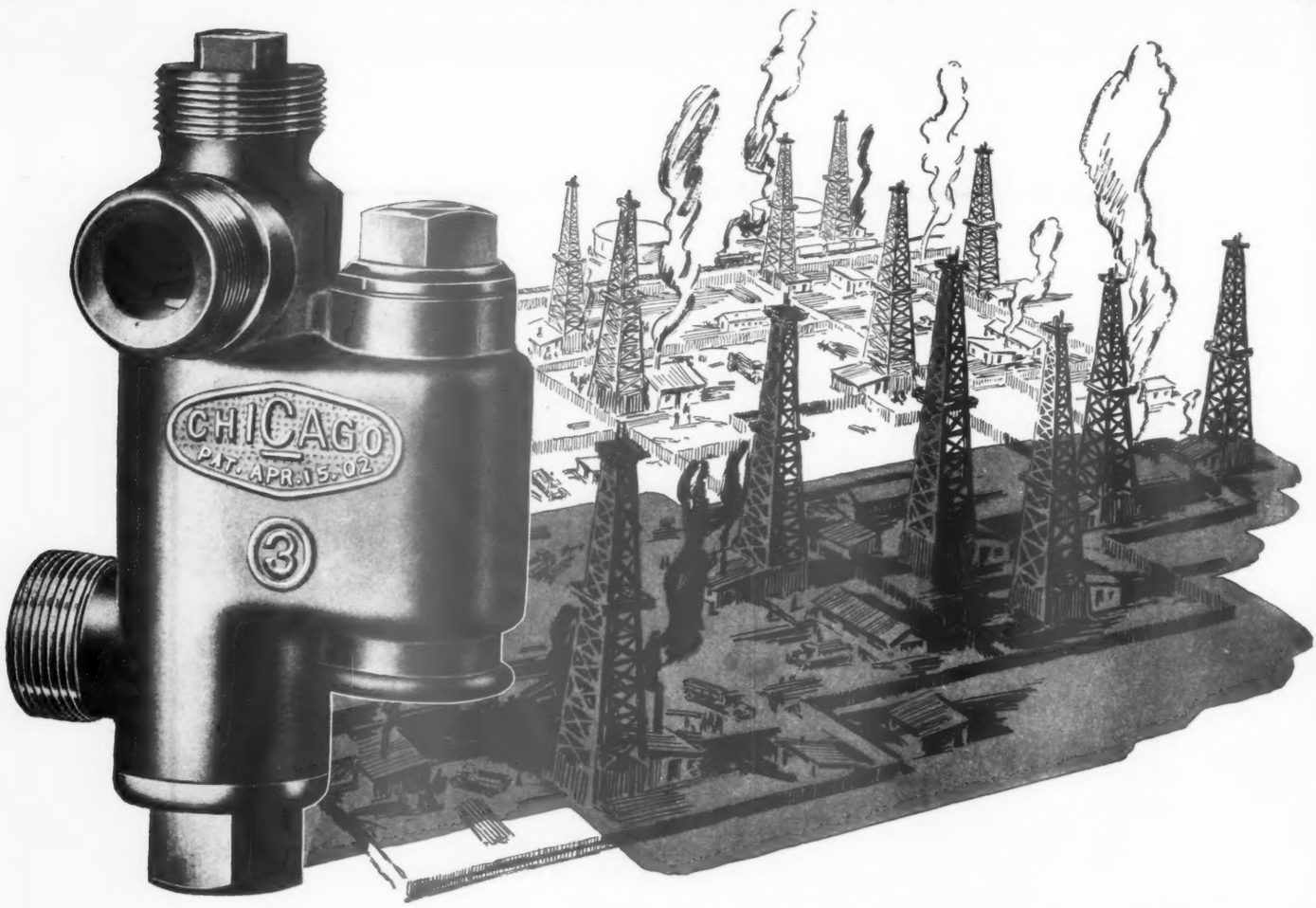

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"Chicago" Automatic Injectors are extremely simple: body or shell, check valve, three tubes and a bushing. Easy to clean and repair. Body and all parts except tubes are of the same special tough bronze as used in our O. I. C. high-pressure valves. Tubes are of hard alloy bronze, successfully resist the effect of steam and water.

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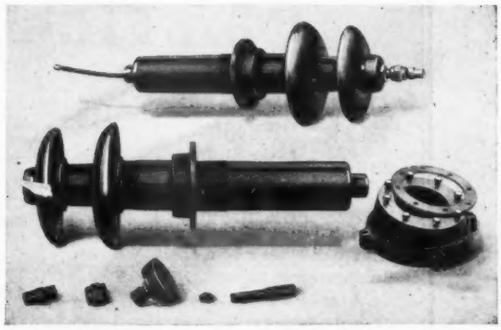
FANS... Desk, Wall and Ceiling types

Bushings... interchangeable



44,000 Voltage Bushing—Its construction makes it possible to stock a single bushing for use with many different sizes of transformers.

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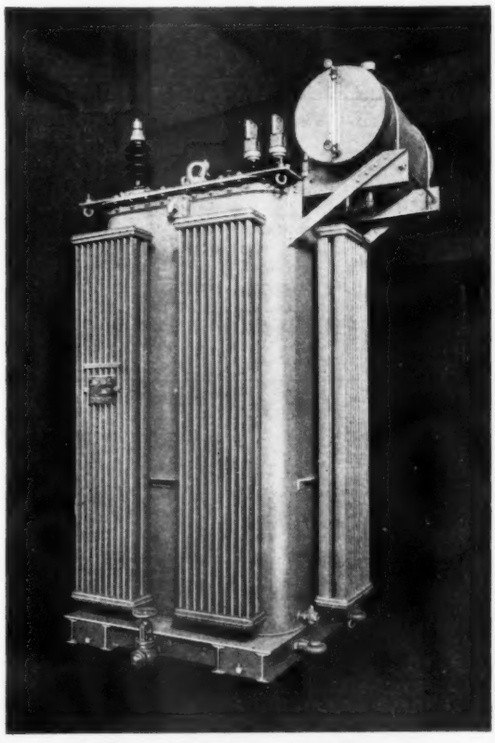
The Wagner High Voltage Bushing is assembled with an "adapter casting" suitable for bolting to different size cover flanges. Thus, each transformer is provided with the required size cover flange while one size bushing will fit a variety of cover flanges. The adapter and cover flange are held together by bolts and a cork gasket makes the joint oil tight.

Bulletin 140 sent free on request, gives a detailed description of Wagner Power Transformers. Write for it, you will find it valuable reference literature.



Wagner High Voltage Transformer

Wagner Quality

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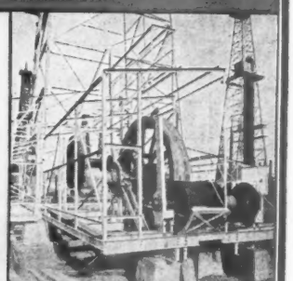
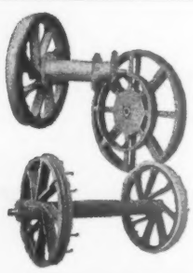
IDECO Machinery Supports. No drilling requirements are too severe. Durable, satisfactory, and economical, 100% salvable, they may be used with any standard make of equipment.

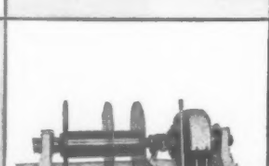




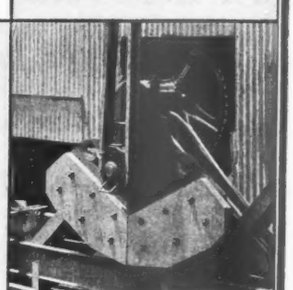
Strong, true running and free from vibration the user of IDECO Steel Wheels eliminates his wheel troubles and saves many times their initial cost.

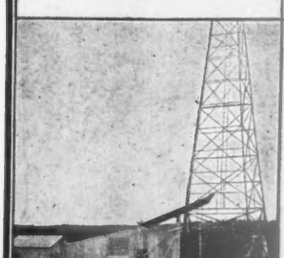
IDECO Crown Blocks save power, wear on the lines and bearing trouble. Designed and tested for high speed, heavy work—they pay for themselves many times over on the first job.

Simplicity of design and minimum of parts are found in IDECO Chain Driven Sand Reels. Portable, easy to install, simple to adjust and fool proof. Operates at high speeds with any make of equipment.



Smooth vibrationless pumping by using IDECO Crank Counterbalances practically eliminates shut downs due to broken rods, saves power, belt wear, band wheels and rig. Installed on any standard rig.





IDECO Sectional Belt and Engine Houses—light portable structures in standard sizes, adaptable to all rigs. Adequately flashed, long life, ease of erection, fire and rust proof plus 100% salvage they solve the building problem.

Highly engineered, permanent yet portable, fire and rust proof, built of the finest materials with galvanized frames and sash IDECO Standard Steel Buildings can be adapted to any shape or style of one-story construction.

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Flood Gates of Oil Are Partly Closed

Highest daily average estimated total production in 1927, week ended July 30, 2,587,105 bbls. Lowest in 1927, Jan. 22, 2,360,789 bbls.

Conservative Methods Bring Production Nearer to Requirements. Keen Competition for High-Quality Crudes

By James McIntyre

Highest daily average estimated light oil production in 1927, week ended July 30, 2,102,385 bbls. Lowest in 1927, Jan. 1, 1,790,729 bbls.

The first week of proration of runs in the Winkler County, Texas, Field, and the continuance of conservative methods in Texas, California, Oklahoma and Wyoming where the potential production is greater than the actual, results in a total average daily output of crude oil of 2,355,534 barrels for the week ending May 12, a decrease of 99,520 barrels per day from the figure presented one week ago and a decrease of 108,856 barrels in lighter gravity oils. The total output is below that of any other week in 1928 or 1927, but, taken together with the imports of petroleum, is yet higher than total domestic crude consumption and exports.

A meeting of operators in the Yates Pool, Pecos County, Texas, will be held on May 18 for the purpose of discussing proration similar to that in Winkler County. A well in the Yates Pool showing a potential production of 90,000 barrels per day has just been completed and pinched in after a short test, and operators there are showing good judgment in taking precautions against useless overproduction.

The situation in Oklahoma continues favorable. The Seminole Field which, if drilled unreasonably, might develop a production that would top its former peak of 527,400 barrels, continues as a great storehouse of oil to be drawn upon when needs require, and this will continue for some time.

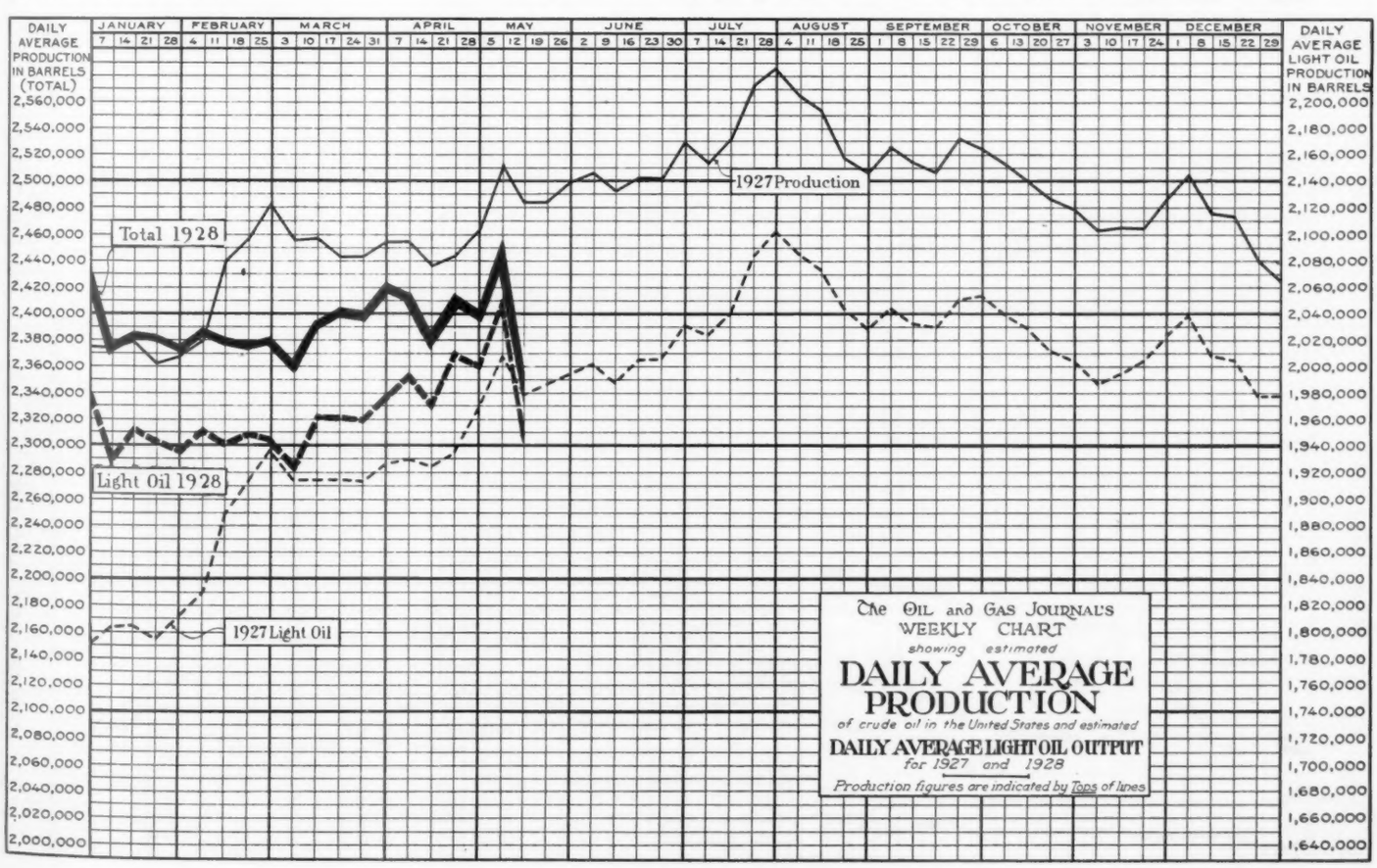
Altogether the crude situation has been greatly improved by the wise attitude of producers, but it must be borne in mind that with the continued large imports of oil we still have a daily oversupply of oil in general, even though we have an underproduction of more desirable "sweet" oil. The latter condition is the bright spot in the picture. There was some withdrawal from high-grade crude stocks in April in the Mid-Continent Field and to a greater extent in May which situation has been worrying the buyers of better quality oil. Oil purchasers appear to be unable to obtain all they require of producers direct and have had to resort to their crude stocks which they have been holding for a better general market condition when they could sell at a profit.

PRODUCTION IN THE UNITED STATES

Estimated daily average production of light and heavy gravity oil in the United States for week ended May 12 and a comparison with the previous week follows:

	May 12		May 5	
	Light	Heavy	Light	Heavy
Oklahoma—				
Tonkawa	13,750	.....	14,070	.....
Burbank	34,820	.....	35,890	.....
Other Osage Fields	28,760	.....	28,865	.....
Cushing and Shamrock	20,285	.....	20,320	.....
Bristow	23,840	.....	23,900	.....
Seminole	278,805	.....	280,825	.....
Northern Miscellaneous	154,890	.....	155,170	.....
Southern Fields	57,900	.....	58,400	.....
Total Oklahoma	613,050	.....	617,440	.....
West Texas—				
Hendricks	153,026	.....	253,000	.....
Yates	49,804	.....	50,167	.....
Remainder	102,605	.....	103,151	.....
Total West Texas	305,435	.....	406,318	.....
North Louisiana	36,675	6,760	38,050	6,765
Arkansas	24,970	61,145	24,015	60,090
North Central Texas	130,632	.....	132,823	.....
Texas Panhandle	68,080	.....	68,590	.....
East Central Texas	22,926	.....	23,058	.....
Kansas	109,025	.....	110,985	.....
Total Mid-Continent Area	1,310,793	67,905	1,421,279	66,855
Gulf Coast	.....	136,860	.....	128,310
Southwest Texas	.....	26,549	.....	26,563
Eastern	112,000	.....	109,000	.....
Rocky Mountain Area	81,677	.....	81,047	.....
California—				
Santa Fe Springs	36,500	.....	37,000	.....
Long Beach	175,000	.....	175,000	.....
Torrance	2,000	16,250	2,000	16,500
Huntington Beach	54,500	.....	55,250	.....
Dominguez	12,250	.....	12,250	.....
Inglewood	18,000	11,000	18,000	11,000
Ventura Avenue	49,000	.....	49,000	.....
Seal Beach	38,000	.....	38,750	.....
Remainder of State	58,000	149,250	58,000	149,250
Total California	443,250	176,500	445,250	176,750
Total United States	1,947,720	407,814	2,056,576	398,478
Grand Total		2,355,534		2,455,054

→ **Total Decrease, 99,520 Bbls.; Light Oil Decrease, 108,856 Bbls.** ←



Prices Continue Their March Upward

All Grades of Refinery and Natural Gasolines Advance. Greater Buying Resistance Developing. Kerosene Stronger. Fuel Prices Pegged

By W. T. Ziegenhain

Oklahoma refiners witnessed a continuation of the trend toward higher gasoline prices as the week closed, but buying resistance on the part of jobbers was decidedly stronger. Additional advances will be posted by many refiners within the next few days despite this greater resistance but it is the general opinion the real test of the market's strength will come over the next week or two as the price on the U. S. Motor grade approaches 7½ cents. Consumption continues at a very satisfactory rate as evidenced by the refinery shipments and there is still enough export buying to eliminate the free offering of any material. In the past three months exports have been responsible for a great share of the support given the market and export inquiries came at times when they were most needed. What prospects the next month or two hold in store for a continuation of this heavy export movement is problematical. Most refiners point to the great increase in the consumption of gasoline in the eastern states at a time when the Atlantic refiners are running large amounts of heavy crude as sure to cause a shortage of gasoline in that area. This factor, together with the increasing foreign demand, offers strong possibilities in support of the idea that export shipments will continue to play a major part in the Oklahoma and North Texas market.

Natural gasolines were given a substantial advance over the week but the buying was centered in a few large companies and by the end of the week the most active support came from a large manufacturer who purchased on the open market to supply current obligations in preference to drawing on stocks. This applies to the doctor treated gasoline in particular for the sour material was freely offered with very little traded. More refiners are coming into the market, however, and prices are expected to advance slowly over the next two weeks.

REFINED MARKET BAROMETER

Gasoline prices were advanced in all refining centers during the past week, but greater resistance is being offered on the part of jobbers as they see the margin between the refinery and retail prices reduced. Kerosene witnessed similar advances. Natural gasoline prices were advanced in the Mid-Continent, and the California market was stronger, but the immediate future of prices in general is problematical. Fuel oil prices have halted in their trend downward and appear to be pretty well pegged at the present level in the respective refining centers. Fuel is selling at a low enough price along the Atlantic seaboard to exclude outside competition. The supply is sufficient, however, as a result of running an increased volume of West Texas and Venezuelan crudes.

Mid-Continent—All grades of gasolines were advanced, and some refiners anticipate posting still higher prices within the next few days. Kerosene is equally strong. Natural gasolines advanced as one large manufacturer purchased large volumes of the material on the spot market to supply his current contracts. There was little export buying to support higher prices and the immediate future of prices is problematical.

Atlantic Seaboard—Gasoline prices were advanced by all major companies but greatest resistance is being felt on the part of jobbers who have not been able to force a corresponding retail price advance. Fuel remains unchanged with prices at such a low level outside competition is eliminated.

Chicago—All grades of gasoline were advanced, but there was evidence of stronger buying resistance. Fuel oil prices seemed pegged at their present level.

Gulf Coast—Gasoline prices were advanced with the stronger market on the East Coast, and lubricants strengthened their position through increased purchases during the week.

Pennsylvania—There was a favorable movement of all refinery products with a tendency for prices to advance.

California—The entire market was stronger as exports and the local demand removed all material readily offered.

Kerosene Strengthened

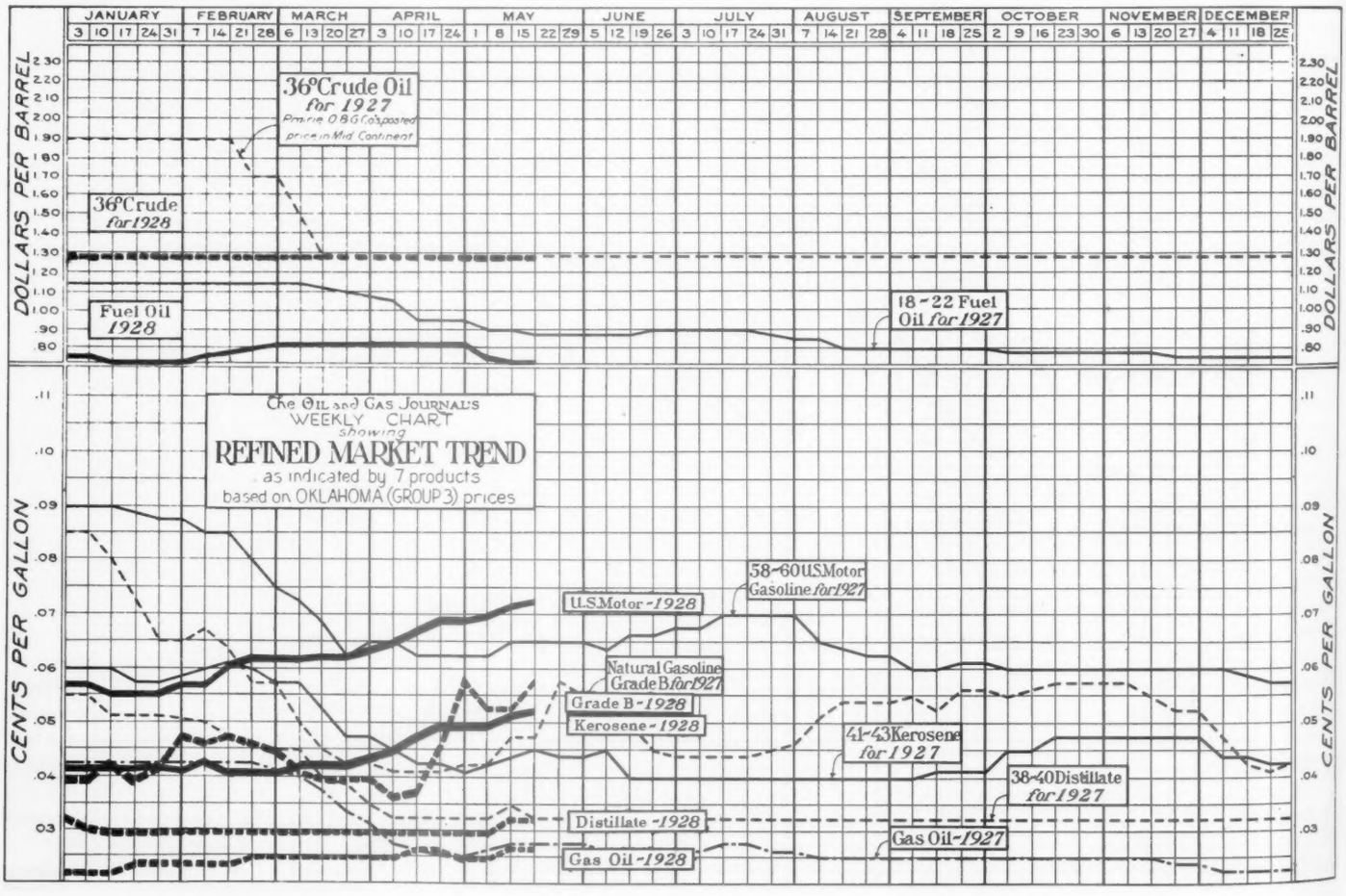
Kerosene prices strengthened also and the demand well supported this higher level. Gas oil remained unchanged while fuel oil, especially the high cold test fuel, showed additional weakness. Refiners are confident prices are as low now as they will go but further price concessions are possible if West Texas fuel is offered in greater quantities as it promises to be with the increasing number of plants operating there. No immediate radical changes are probable, however, as fuel stocks in Oklahoma are low and refiners can afford to store a portion of their production should prices go much below their present level.

There is a much better demand for lubricants in general but prices remained unchanged. Cylinder stocks and bright stock represent the only exceptions to this for they continue to be freely offered with price concessions for quantity orders. Wax remains unchanged.

Jobbers are beginning to see their margin slowly dwindle as the refinery gasoline prices strengthen weekly with no corresponding increase in the tank wagon and service station prices. There has been a gradual upward revision of these prices

(Continued on Page 159)

NEW YORK, May 15. — The Standard Oil Co. of New Jersey advanced the price of gasoline in tank car lots to 10¼ cents, at Bayonne, N. J., meeting the price established by the Sinclair Refining Co. several days ago.



Refiners Improve Market Situation

In Better Position Statistically Than Crude Oil Producing Branch. Gasoline Stocks Exceptionally Low As Summer Approaches

By C. O. Willson

The petroleum refining branch of the oil industry at this time has its house in better order than does the crude oil producing division according to the latest available reports of the Bureau of Mines covering the statistical situation up to April 1 of this year. The government reports reflect an unusual situation in which the refiners have been able to better their market on gasoline and some other products despite the fact that the producers as a unit including the major buyers are still running to storage considerable quantities of crude oil.

It has often been pointed out in the past that it is impossible for one branch of the industry to better its condition when the other branch is suffering from overproduction or some other ill. This is unquestionably true over a long period but in the present situation the continued excess of crude oil has not prevented the refiners from carrying on their operations in a conservative manner so that they are now entering the season of maximum consumption for their principal product in an exceptionally strong statistical position. Obviously, just how long this improved position continues depends to a large extent on developments in the production end for the relative situation in regard to supply and demand of crude oil ultimately is the dominating factor in all oil markets.

The present refinery situation, however, should be encouraging and the prediction is made that it will contribute later to the improvement of the entire industry.

Tables and Charts

The accompanying tables and charts were prepared in order to summarize the present statistical situation of the industry based on government reports. Data on production and consumption of crude oil and refined products include daily averages in the first three months of 1928, the first three months of 1927, and the entire year of 1927. It is recognized that it is impossible to take any three months in a year and attempt to gauge conditions over a period of several months in the future. In this case it is reasonably certain that later reports will reflect changed conditions in regard to supply and demand which are not indicated in the data covering the first three months operations.

Crude Oil Supply

In regard to crude oil production, probably the most interesting feature is the large increase in crude oil imports, amounting to 64,000 bbls. daily when compared to the first three months of 1927. The general trend in crude oil imports has been upward over the past year. The average for the first three months of this year is greater than any period since 1921 and 1922 when imports from Mexico were heavy. The bulk of the present imports are coming from Venezuela and Mexico.

Due to this increase in imports the total crude supply the first three months of this year exceeded the average from the same period in 1927 although 40,000 bbls. less than the average for all of 1927. Data on domestic crude oil production are based on pipe line deliveries and for that reason are not comparable with reports which take into consideration all the oil produced at the wells.

Crude Oil Demand

Due largely to the conservative operations of refiners the total demand for crude oil the first three months of this year was under the average for the same period in 1927. Exports, which are a minor factor in total demand, are running slightly higher this year. The significance of the lower crude oil run to stills in its relation to total crude oil demand at refineries will be discussed under that heading.

Crude Oil Stocks

As a result of the continued high rate of supply with a smaller demand, stocks continued to increase the first three months of this year. The daily increase in stocks was about 80,000 bbls. greater than the same period last year and 21,000 bbls. over the average for 1927.

It should be pointed out that the greater part (10,211,000 bbls.) of the total increase from January 1 to April 1, came in January. The January increase was one of the largest monthly increases in the history of the industry. In February, the increase dropped to 4,535,000 bbls. (156,000 bbls. daily) and in March to 3,969,000 bbls. (128,000 bbls. daily). This decrease in monthly stocks was due to increased demand, the March supply being larger than in January or February.

Crude Runs to Stills

The first three months of this year refiners in United States ran less domestic crude oil to their stills than they did the same period in 1927. The daily average also was 22,000 bbls. less than the average for all of 1927. While the domestic crude runs were less there was a substantial increase in the quantity of foreign crude oil consumed by refiners. This ties in with the previous data showing the large increase in imports of crude oil.

As previously explained, refiners in United States during the winter months operated their plants on a conservative basis. There has been considerable agitation in the refining branch to reduce plant operations during the winter months in order to prevent large accumulations of gasoline. These heavy gasoline stocks in the past have proved a burden to the industry and are held responsible for the fact that gasoline prices generally are lower in the summer months than during the winter.

The new development this year accounts for the fact that crude oil runs to stills the first three months were only 2 per cent greater than the first three months of 1927. Ordinarily from 15,000,000 to 25,000,000 more crude oil would have been run to stills the first three months of this year. This no doubt would have meant larger purchases from producers which in turn would have lowered the quantity of oil they would have run to storage. In this sense, the new policy of refiners in regard to their plant operations in the winter months has worked a hardship on the producers.

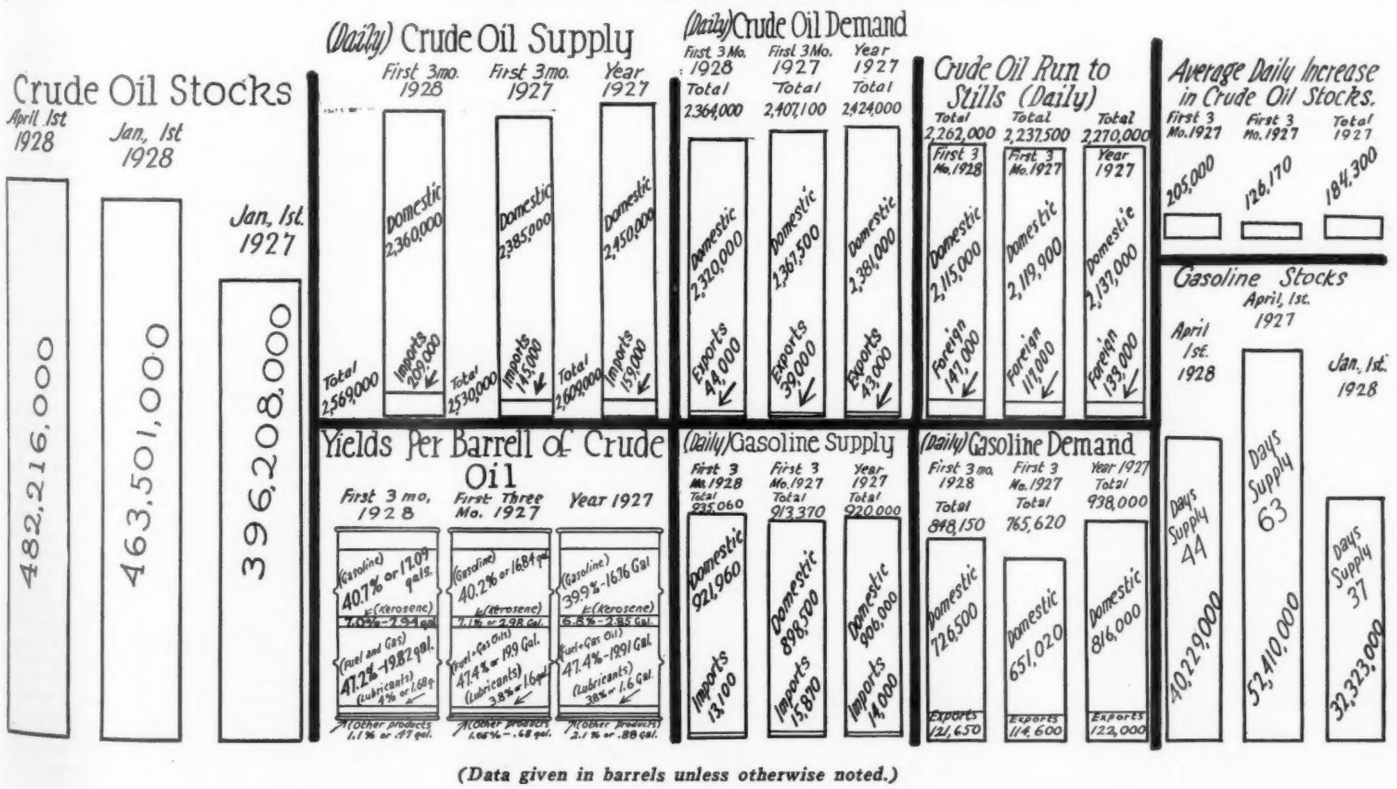
It is apparent, however, that this condition is temporary. What the refiners failed to run to their stills in the winter months obviously will have to be made up in the summer months. For this reason, observers familiar with this situation, are predicting exceptionally heavy crude oils runs during the remainder of the year. The Oil and Gas Journal reports covering Mid-Continent refinery operations for May show in that section the higher crude runs have already materialized. With crude oil production under control later government figures should reflect a more healthy position between crude oil supply and demand.

Yields From Crude Oil

Although the average gravity of the crude oil now being refined in this country is under that of a year ago, refiners through improvements in their plant operations apparently this year will obtain more gasoline from a barrel of crude oil.

(Continued on Page 153)

PRODUCTION AND CONSUMPTION OF CRUDE OIL AND GASOLINE



(Data given in barrels unless otherwise noted.)

Champagnolle May Make Major Pool

Deep Sand Horizon Produces Paraffin Base of Oil. Wells of Large Initial Production. Thirty-nine Operations Under Way

By D. H. Bancroft

EL DORADO, Ark., May 12.—One or two more wells in Champagnolle district of Union County and El Dorado will be staging a revival of the scenes and activities of the original boom occasioned by the Busey well in January, 1921, and the three successive Smackover booms in 1922-24 and 1925. Three months ago El Dorado was about as pessimistic as an oil town can be but since the Pure Oil Co. completed the discovery well in a new deep sand at 3,200 feet, and more particularly since the Magna Producing Co.'s No. 1 Dumas and latest of all, Rushing and others' No 1 Rowland, came in, an entirely new atmosphere pervades the town. Not even the salt water showing in the latest test, that of the Lion Oil Refining Co. on the Rowland land a quarter mile south of the discovery well affected the new optimism for long and predictions of another pool of major proportions in south Arkansas are general—not without considerable foundation—and shared in to large extent. New developments also have considerably upset the theory that no production is to be found in or below the red beds.

The Lion test, in the NE cor. Section 15-17-14, came in the night of May 7 after being bailed down 700 feet making an estimated 1,000 bbls. of salt water and 50 bbls. of oil from 8 feet of sand, total depth 3,209 feet, at which it was at the same subsea level as Simrall and others' No. 1 Finley in Section 12-17-14, abandoned as a salt water hole at 3,179 feet. Arkansas Drilling Co., which drilled the hole, selling it and the lease to the Lion Oil Refining Co. 10 days ago for $20,000 cash and payments up to an additional $50,000 out of the first oil, thinks the water is due to a bad casing seat and is setting a short string of 5⅜-inch casing. Six and five-eighths inch casing was cemented at 3,192 feet and the test was made without any liner in the hole.

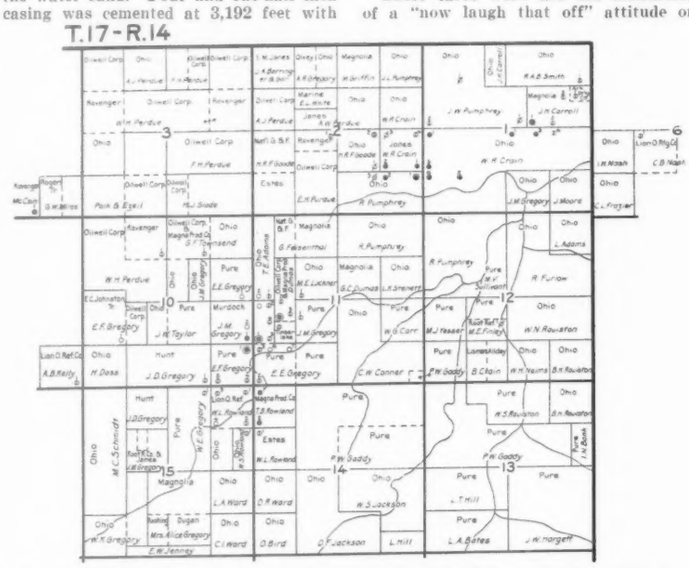
When drilling fluid began rising against the bailer, christmas tree connections were closed and the well cleaned itself through a five-eighths inch choke in a 4-inch flow line. It was a half hour later when a considerable amount of oil appeared and then the water. After flowing for about three hours it was shut in pending arrival of the short string, and at this writing there is still much discussion whether it is bottom water, or, as the drillers believe, a bad casing seat or leaky joint.

Consistent Producers

The Pure Oil Co.'s discovery, No. 1 Gregory, in the NE cor. SE SE, Section 10-17-14, a quarter mile due north of the Lion's, was completed April 4 with an initial 2,000 bbls. of clean 35 gravity oil from 12 feet of sand, total depth 3,153 feet, with 6-inch casing cemented at 2,972 feet Thirty-three days later it is holding well up to its initial production. Two weeks later Oilwell Corp. completed No. 1 Dumas in SW cor. NE NW SW, Section 11-17-14, flowing 1,320 bbls. of oil and 3,000,000 feet of gas from 14 feet of sand, total depth, 3,239 feet, through a 1-inch choke and also is holding up well. Its location is a little over a quarter mile northeast of the Pure's discovery well. The third, and so far the latest, completion in the new horizon was the best of the lot, as it has grown steadily from its original production and is now doing about 4,500 bbls. through chokes. It was completed April 30 flowing an initial 3,927 bbls., of 35.6 gravity pipe line oil from 16 feet of sand, total depth 3,208 feet.

On first tests this star well looked like a failure. It was dry in 2 feet of sand at 2,738 feet and cemented 6⅝-inch casing at 2,735 feet to go deeper. Testing salt water at 2,740 feet it made a drill stem test 11 feet lower and was still in the water sand. Four and one-half inch casing was cemented at 3,192 feet with the bottom at 3,206 feet in 14 feet of sand and 2 more feet were taken before the well was bailed in. Location is on a direct northeast-southwest line between the Pure and Dumas wells and not quite half way between the two, being a little closer to the Pure's well.

These three wells are the foundation of a "now laugh that off" attitude on the part of most of those in El Dorado whenever it is suggested that the present status of the Lion well indicates the edge of the new pool. They come back with the remark that it takes salt water holes to show where the production is, and also refer to the many failures well within proven area of other pools as proof of their claim that this well does not necessarily condemn the new pay nor the stuff in line of the present trend of development — southwest. They have no argument yet to answer the prediction that development of the new horizon will limit its production to a shoestring strip. And in both cases they present the more than 130,000 bbls of clean, high-grade oil (it works out 33 per cent gasoline) the three have produced to date in a manner intended to serve as a crushing answer to the pessimist.



The deep sand wells in the Champagnolle Field in Union County, Arkansas, are indicated by a dot within a circle in Sections 10 and 11-17-14. The Champagnolle deep sand may develop a major pool and the crude is high grade.

This production has already increased Champagnolle daily average runs from the field from 1,000 bbls. before the Pure well came in, to 6,300 bbls. as of the last report. The pool has three lines into it and a fourth is reported in prospect. Magnolia Petroleum Co. built the first pipe line, 6 miles of 4-inch from production to Lege tank farm about 6 miles north of El Dorado, to handle oil from No. 1 Carroll in Section 1-17-14 which, completed September 30, 1928, with 300 bbls. initial from 2,982 feet, is still making 275-85 bbls. natural a day. In February Root Refineries, Inc., completed a 6-inch line to the plant just south of El Dorado, and Lion Oil Refining Co. has recently laid 10 or 12 miles of 4-inch to connect with its El Dorado-Smackover main line. Root Refineries, Inc., Lion Oil Refining Co. and Kettle Creek Refining Co. are running approximately 3,500 bbls. of Champagnolle crude this month and Ouachita Valley Refining Co. is getting its cracking unit into commission and will also take 500 to 1,000 bbls. a day. The oil runs 35-36 gravity and is bringing $1 25 per barrel at the run. A recent refinery test showed recoveries of 33 per cent gasoline, 11 per cent kerosene, 38 per cent residuum and 3 per cent refinery losses. The oil also contains about 1.3 per cent of sulphur.

Have Not Identified Sand

Identity of the producing sands, or the group to which they belong, has not been definitely determined. At first it was thought it might be some member of the Trinity group but opinion on this point is much divided. Unlike Trinity production in Pine Island district of Caddo Parish, a true sand condition exists, whereas Pine Island is more of a limestone production. But the new deep stuff in the Cotton Valley Field of Webster Parish, Louisiana, at 4,600-4,700 feet is coming from sands in what is accepted as in the Trinity group. Whatever the identity of the new Champagnolle pay may be, it has upset prior theories that in this region the red bends are a marker below which it is useless to go in expectation of getting production, or of being productive themselves.

However, production has been obtained in the red beds and below before Champagnolle's deep stuff was located, and is being found in that formation in the new pool at present. It was found, but not in commercial quantities as the well is believed to have been too far down structure, in a well drilled in October, 1926, on the Garrett land in Section 6-18-13 by the Garrett-Modisette Drilling Co. who were active in developing the Lawson-Urbana area. Completed at 2,997 feet, this well had an initial production of 440 bbls. and actually produced around 8,000 bbls. before salt water drowned it, the water believed to have come from a bad cementing job and also because it was probably an edge well. However, the series of 50,000,000 to 75,000,000-foot gassers that were completed at around

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GAS MEN MAY SELECT PITTSBURGH OR LOUISVILLE FOR NEXT MEETING

By Andrew M. Rowley

DALLAS, Tex., May 13. — Continued expansion of the Natural Gas Department of the American Gas Association as an organization devoted primarily to the interests of the natural gas industry with the effects of the merger of the Natural Gas Association of America and the American Gas Association seen chiefly in an enlargement of the scope and facilities of the technical and research committees, was indicated strongly during the convention of the Natural Gas Department which closed here Thursday. In this connection, still greater growth of the natural gas association in the western and southwestern sections of the United States is expected.

To those who may have felt the merger, consummated last year, of the natural gas association with that of the manufactured gas association, would result in a loss of identity of the natural gas men's organization, the convention here was an eye-opener. The American Gas Association, it is understood, has made no effort to direct the affairs of or interfere in any way with the policies of the old Natural Gas Association of America.

Pittsburgh or Louisville

While the convention here closed without selection of the next place of meeting, it is felt the convention next year of the natural gas men will be held either in Pittsburgh, Pa., or Louisville, Ky. The following year the policy of bringing the big meeting to the West or Southwest probably will be followed.

Samuel W. Meals, new chairman of the Natural Gas Department of the American Gas Association, is president of the Carnegie Natural Gas Co. of Pittsburgh, and Henry C. Morris, president of the Dallas Gas Co., and new vice chairman of the department, is representative of the extensive membership and interests in the Southwest.

As during previous years, the question and discussion sessions of the convention attracted widespread interest. The attention of the gas men attending the meeting Wednesday was diverted somewhat by their desire to assist the four judges selected to choose the prettiest blonde in Dallas. However, after two beautiful young ladies had been duly selected by John Corrin and the other judges, with the aid of the 1,700 gas men registered at the meeting, J. D. Creveling succeeded in getting the question and discussion sessions under way.

It developed during the discussion the oil industry's problem of increasing outlets for its products has a twin in the gas industry's effort to increase its load. Gas men, during their past several meetings, have stressed the importance of broadening their outlets. They have been spurred by the constant efforts of the electrical companies. Delegates related numerous instances where other utilities had increased their market outlet through various methods and sometimes at the expense of the gas industry. As a result of the discussion those attending the con-

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Another Great Well in Winkler County

Wildcat 9 Miles North of Hendricks Pool, and Close to Lea County, New Mexico, Line, Tests 8,000 Bbls. a Day

By James H. Dameron

FORT WORTH, Tex., May 14.—About the time H. N. Pardee, umpire of Winkler County, had proration working 100 per cent in the Hendricks Pool, Gibson & Johnson and Kesslar & Logan's No. 1 Daugherty, Section 3, Block 74, 9 miles north of the north end of Hendricks, came in making an estimated flow of 8,000 bbls. of oil and 60,000,000 feet of gas. Top of pay is 3,155 feet and total depth 3,167 feet. The big pay is reported at 3,159-64 feet.

The well is shut in and is to be opened early in the week for a test. The wildcat comes under the jurisdiction of the Railroad Commission's recent order prorating production in Winkler County. Operators, however, are desirous of shutting down drilling in the area. Both the Texas Pacific Coal & Oil Co. and the Humble Oil & Refining Co. have suspended their initial drilling plans in Block 74 for at least a week. A meeting of lease and royalty owners has been called for Friday, May 18 in Fort Worth, and at this meeting an effort will be made to adopt a shutdown plan similar to the one used in Seminole. Other operators have delayed starting any new tests until after this meeting.

E. J. Marsten, president of the Texas Pacific Co., offered to hold up development work on his company's leases in that area for 30 days so that every one might gain a clearer view of the entire production situation.

At the Fort Worth meeting next Friday the Railroad Commission will be in charge in order that the proceedings will be followed in legal procedure.

Many Favor Shut Down

Most of the leaseholders and royalty owners in the new area attended a meeting held in Fort Worth May 10 and favored a shut down plan. However, it was felt no action should be taken until the Railroad Commission had issued a call for a meeting and until all of the lease and royalty owners had been notified of the meeting.

The Railroad Commission's order prorating production in Hendricks also includes all of Winkler County and consequently the new wildcat producer falls within the jurisdiction of the order. It will be allowed to produce its prorata share the same as other wells in that county. But, as has been stated, operators generally are more desirous of preventing drilling in that sector at the present time.

The well came in about 7:30 the morning of May 9. The bit went into a cavity at 3,167 feet and it was decided to make a test. After the third trip with the swab the well started flowing and flowed only a few minutes before a column of water reached half way up the derrick. This was followed by an 8¼-inch column of oil which ripped off the crown block, cleaned the hole and started flowing 75 feet over the derrick.

Some water was reported to be showing. However, the well flowed only 45 minutes before the 8-inch master gate was closed and the source of the water showing has not been determined and will not be until the test is made, when additional tankage will be ready.

Source of Water Uncertain.

Some are of the opinion the water is rotary drilling water used in killing gas and that which was pumped in the cavity. Others reported the water to be clear water, which would indicate it was not drilling water. Regardless of the water showing, it may or may not be significant, as one operator in Hendricks pointed out, and recalled the predictions Hendricks would be drowned out by water before it reached a peak of 200,000 bbls.

One of the attendant features in connection with the discovery is that no geologist interviewed said the well had opened another pool. Nor did they say it had extended the Hendricks Pool. All of which sums up that Winkler County is very much of a problem.

Already Hendricks has proven the biggest discovery in the history of the industry. The pool at present is 6½ miles long and as yet undefined on the north, and about 3 miles wide and undefined definitely on the east. There is a gap about a mile wide in the northern part of the pool that has not been drilled but this is expected to be connected because the wells on the north and south side of the gap do not indicate otherwise.

Structure a Matter of Debate

No. 1 Daugherty has led most geologists to believe that production will be found from the north end of Hendricks on up and beyond the new wildcat producer. Their theory is that saddles will probably be found and the structure will be a series of pools. Some even fear the saddles may be high enough to produce, and in that event production will be continuous, which would be a new chapter in petroleum geology.

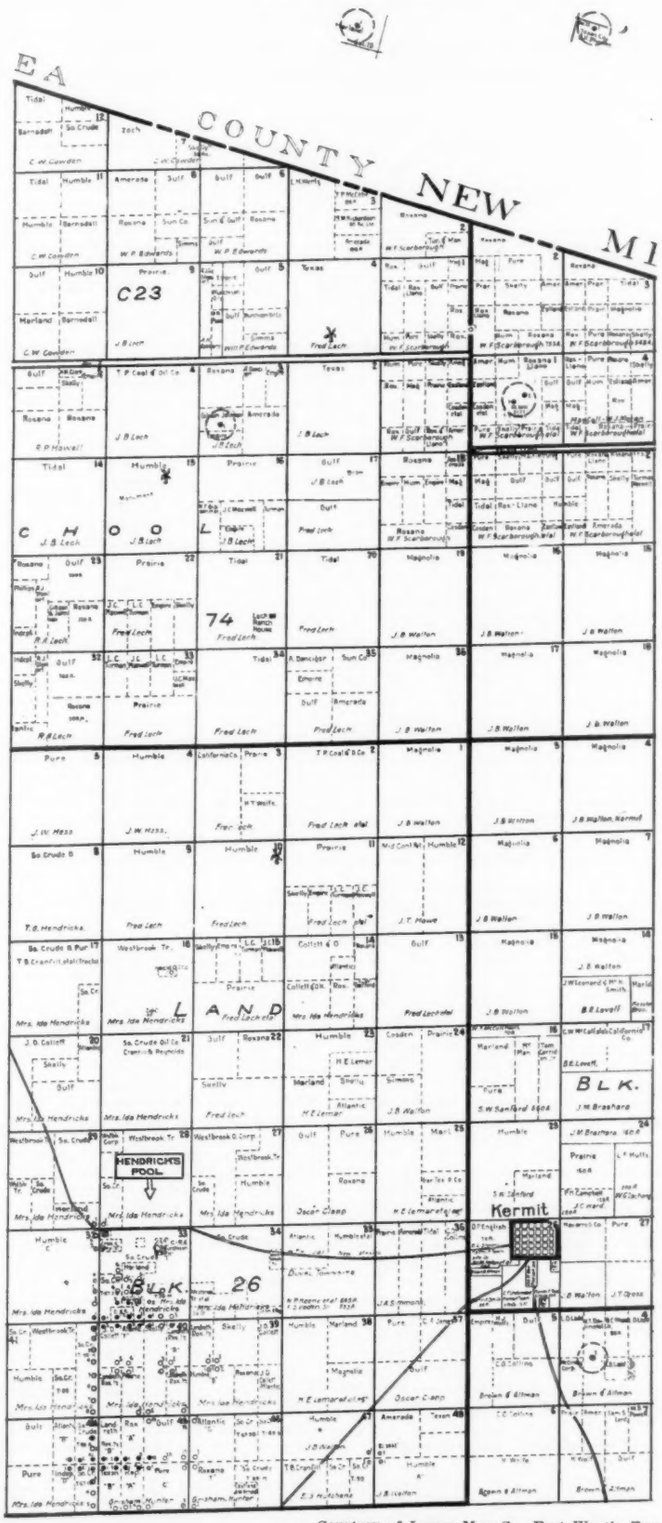
Wells in the north end of Hendricks indicate a saddling condition. This makes the World Oil Co. hold the key to the situation unless other drilling starts before that company starts drilling its well in Section 16.

World Oil Co. purchased the center 20 acres of the south half of the NE quarter of Section 16, Block 26, last week and is reported to have paid $350 an acre for the lease. A location has been made in the center of the east 10-acre tract of the lease. However, drilling on the well will not start for at least 30 days, officials of the company said. When this well is started it will be one of the most closely followed tests in the county. Location for the well is a little more than 3 miles north of production in Hendricks.

The accompanying map shows the north end of Hendricks and the territory in a direct line north into territory including two New Mexico wells.

About 5 miles northeast of the Gibson & Johnson and Kesslar and Logan well, Marland Oil Co. is drilling No. 1 Eaves, Section 19, which is making a heavy gas flow and is reported to be running 50 feet higher than No. 1 Daugherty.

It has been reported that the oil from No. 1 Daugherty is similar to the crude produced in the Roxana and Llano wells 3 miles to the east. Most reports from the field indicate the oil is more similar to the Winkler crude. It is the general opinion that the pay in No. 1 Daugherty compares to the main pay zone in Hendricks.



—Courtesy of Logan Map Co., Fort Worth, Tex.

The sensational Gibson & Johnson well in Section 3, Block 74, Winkler County, which started off at 8,000 bbls. a day together with a 60,000,000-foot gas production, is just a few miles south and west of the Marland Oil Co.'s Eaves well in Lea County, New Mexico, which is an enormous gas well with a spray of oil at 2,927 feet.
The Texas Production Co.'s big gas well in Lea County is indicated on the map east of the Marland Oil Co.'s test.

FIRST AID SCHOOL

The Bradford, Pa., group of refineries, through the Fire and Safety Marshals Association, has arranged to have a representative of the United States Bureau of Mines give a regular course of five lessons in first aid treatment to refinery employes. Three classes will be held daily. The lessons will be given without charge and will cover the use of the tourniquet, artificial respiration, bandaging arm, head, etc., applying splints to broken bones, stopping the flow of blood until a physician can be secured, and other important first aid operations.

Oil Companies Promoting Motor Trips

Greater Gallonage Movement Proving Profitable in the Rocky Mountain States. Road Maps and Routes Ready

By Tolbert R. Ingram

DENVER, Colo., May 12.—Discussion among refiners and marketers in the Rocky Mountain territory regarding the editorials and plan outlined by The Oil and Gas Journal for increasing the sale of gasoline through encouraging the greater use of motor cars invariably leads back to one subject—tourist travel. The reason for this is apparent.

The Rocky Mountains, from Canada to Mexico and the territory to the west as far as the Pacific Coast enjoys a tourist business that has been fostered and developed until it has become one of the great assets of the West. Numerous agencies have contributed to this development, including the railroads, the hotels, the National Park Service, communities, chambers of commerce, tourist bureaus and many other organizations.

The growth of this business has had a direct and evident effect in increasing the quantity of motor fuels sold by the distributors and refiners. The oil companies are and have for some time been contributing to this development in various ways and are alive to any discussion which may lead to the working out of better methods or any new ideas which will result in increasing auto mileage and gasoline gallonage. The merits of the plan suggested by The Oil and Gas Journal are recognized and commended, and in some instances incorporated into the plans of individual companies.

Growth of Touring

In order to appreciate the extent of tourist travel in the West it may be well to quote a few figures on the 1927 business as compiled by the Denver Tourist and Publicity Bureau. This bureau estimates that in 1927 there were 700,000 rail and auto destination and stopover travelers in Colorado compared with 300,000 in 1915 and that these expended $45,000,000 in the State against $8,000,000 in 1915. It will be noted that in the period mentioned there was an increase of 133 per cent in the number and 462 per cent in the amount that was expended. The explanation of this is that in 1915 the average length of the stay of the tourist in the State was from three hours to three days, while in 1927 the length of stay was from three days to three weeks. One of the prime purposes of some of the campaigns waged in recent years was to increase the time spent in the State by the tourists. The figures give evidence as to the result.

The increased time spent in the State was brought about by the numerous agencies engaged in the encouragement of tourist travel and was done for the purpose of increasing the benefits to the commonwealth as a whole. The lesson which the marketers of gasoline may obtain from this is evident. Anything done to increase the use of motor cars can have one result from their standpoint and that is a corresponding increase in the gallonage of gasoline sold. Conditions in the Rocky Mountain area, where tourist travel has been developed to the point where it almost has become a science may be different from other districts of the country, which means that campaigns will have to be developed along lines suited to the immediate territory.

It is an axiom in Colorado that everything on wheels moves on Sundays, holidays and week ends during the spring, summer and fall seasons. A trip out of Denver, Colorado Springs, Pueblo or any other of the larger communities on almost any highway leading to the mountains, the national parks, the national forests and the fishing and hunting grounds, on any of the occasions named will reveal the highways throbbing with moving cars, and the byways dotted with campers, picnic parties and people out enjoying the natural scenery. The heavy influx of tourists from other sections is partly offset by an exodus of Colorado people during the summer. Everybody seems to be on the move. Every service station in the territory, with a very few exceptions, has road maps, daily reports on conditions of the highways, weather reports, and general information for their patrons. Some of the distributors feel that this business has been so highly developed that the field for increasing it is not as promising as other fields, but this opinion is far from being general. One distributor pointed out that if the average stay of a tourist can be increased from three hours to three days between 1915 and 1927, that it is possible to extend the period still farther. They also call attention to the possibilities in other districts where this business has not been so finely developed as it has been in the West.

Continental Oil Co.'s Campaign

The Continental Oil Co., the largest distributor in the Rocky Mountain States, is a pioneer in developing touring by motor. Its first work along that line was a campaign in which it ran a series of advertisements in the Omaha, Kansas City, Oklahoma City and Dallas newspapers. Each advertisement was devoted to some special attraction or interest that would appeal to the owner of a motor car. For instance, one advertisement was headed, "Take Your Vacation in the Car This Summer." Another began, "Westward Ho! To Vacation Land." Others were devoted to the special attractions of the Mesa Verde National Park, the Yellowstone National Park, Salt Lake City and Scenic Utah, and to roundups, and features that were distinctly western. Each advertisement carried a coupon which the reader could fill out and send in and in return receive a road map of the state in which he was particularly interested. The company now issues maps covering 14 states. They are printed in colors and contain in addition to road information, other data and views of the scenery. The plan was so successful that it has been continued on an enlarged scale. Last year it distributed 21,000 maps in answer to direct signed coupons, and this year the inquiries are heavier than usual. While the campaign is in progress inquiries run from 300 to 400 per day.

It will be noted that the advertisements appeared in newspapers in the so-called "hot belt" at the time of year when the people were planning their vacations, and in a territory in which the company was not at that time marketing gasoline through its own service stations. C. C. Warner, who is now in charge of the advertising, in discussing the campaigns, said that the company early recognized that any increase in the market on wheels (the traveling market as contrasted to the local market) in the six mountain states in which it was then doing business would result in its getting an increased percentage of the business. If the prospective tourist was familiarized with the company's name and the brand of its products through the furnishing of maps and road information before he started, there would be a greater chance of his buying Continental products when he got here. A contact already would have been established. The company also recognized the principle that no large unit in an industry can prosper at a greater rate than the commonwealth in which it does business. Even if the advertising resulted in an increased business for other companies, it felt it would be justified in doing what it could to stimulate travel since it would benefit the entire community through an increased demand for supplies, food, clothing and camping paraphernalia. Thus it would be contributing to the prosperity of its own local patrons. The fact that the company has continued this program on an increasing scale each year is evidence that it considers the results having justified the effort. The executives of this company are keenly alive to the suggested plan of The Oil and Gas Journal and have conducted inquiries among other distributors and had reports made to them on various phases of the subject and are making a study of the information it has obtained.

Follow these FREE maps into the Cool Mountains
GET away, this summer, from the humid heat of the lowlands. Drive up, over smooth, plainly marked roads into the bright, cool air of the mountains Either the Ozarks or the Rockies will offer you a change and a rest and a variety of delightful entertainment that will exactly meet your personal idea of a perfect vacation.
(Before you leave home, you can plan every stage of your trip with new, 1928 Road Maps: see the coupon.)
Watch for the Conoco sign as you travel. It means courteous information, expert service and the finest motor fuel and lubricants.
Let This Coupon be Your FREE Travel Guide
CONTINENTAL OIL COMPANY
Denver, Colorado. Dept.
Send me your new FREE 1928 road maps of the states checked below:
Arkansas Colorado Idaho Kansas Utah
Missouri Montana Nebraska New Mexico
Oklahoma Texas Washington Wyoming
Name
Address
CONOCO GASOLINE
CONTINENTAL OIL COMPANY
Producers, Refiners and Marketers
of high-grade petroleum products in Arkansas, Colorado, Idaho, Kansas, Missouri, Montana, Nebraska, New Mexico, Oklahoma, Oregon, South Dakota, Texas, Utah, Washington, and Wyoming

Reduced facsimile of one of a series of two-column advertisements being carried in newspapers of six states this year by Continental Oil Co.

Oil Industry Can Help Itself

It would be interesting to know what the results in the way of increased consumption of gasoline in the Rocky Mountain States have been, but it is difficult to obtain statistics that answer the direct question. Reports in the office of James Duce, state oil inspector, show that in 1927 the average consumption of gasoline per registered motor car in Colorado was 475.4 gallons, compared with 441.2 gallons in 1926 and 408.1 gallons in 1925. However, these apparent increases may be in part attributed to causes other than the increased use of cars such as the introduction of closed cars and heavier trucks, the establishment of bus lines and taxicab services and the increased use of gasoline as

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TRAVEL ASSOCIATION HEAD ADVISES GASOLINE MARKETERS TO GET BUSY

Harry N. Burhans, of Denver, President of the American Travel Development Association, a body composed of organizations not operating for profit, but interested in encouraging travel in America by Americans, was asked for his opinions and suggestions on the greater gallonage movement. His reply, substantially, was as follows:

"Not many years ago I picked up one of the leading magazines and turned to an advertisement of the Union Pacific Railroad which set forth the advantage of its all-steel cars, its excellent dining-car service, and its splendid roadbed. Then I turned to the next page and read an advertisement of the Rock Island railroad. It also told of the company's all-steel cars, excellent dining-car service and its splendid roadbed. These were typical of most of the railroad advertising, but a little farther on I found an advertisement of the Santa Fe railroad and it was trying to sell to the public a little of the scenery of the Grand Canon. The Union Pacific, the Rock Island and the other railroads are now following the lead set by the Santa Fe. I have yet to find the first man who went into a ticket office and purchased mileage because of a company's equipment, service and roadbed. The average traveler wants to go somewhere and see something and his patronage goes to the railroad that gives him what he wants. It seems to me that the situation of the marketers of gasoline is very much like that of the railroads at the time of which I speak. Most of them are telling the public about the excellence of their products, when what the public is interested in is where to go and what to see. The gasoline they use is only a means towards an end. ..I venture the assertion that a motorist taking a thousand-mile trip will use half a dozen different brands of gasoline in his motor before he completes the journey and that he will find so little difference in the various brands that he will have forgotten which brand he used last. The railroads have stopped advertising equipment and begun telling about scenery, hunting, fishing and outdoor sports and of their ability to take their patrons where these things may be found. When the gasoline distributors begin doing the same thing instead of bragging about the quality of their product, they will be on the road towards a larger market for their gasoline. In other words, sell more mileage and they will use more gasoline without regard to whether it is knock or antiknock fuel."

Review of Oil Developments Abroad

Russians Negotiating Sale to Japan. Trinidad Investigation Completed. New French Legislation Passed

Specially Contributed

According to the reports of German newspapers, the Russian Oil Syndicate is negotiating at present with the Japanese government for the sale of oil to Japan. The Russian Oil Syndicate has offered a large shipment of fuel oil for the Japanese fleet. The Japanese firm Mitsubishi will represent the Russian Oil Syndicate in Japan, making possible the importation of Russian oil into Japan without any difficulties. It is said that the Japanese government is favorable towards this scheme. The first contract will cover the delivery of 50,000 tons. Later on the Russian Oil Syndicate intends to extend its activities in Japan by establishing its own warehouses and oil tanks for the supplying of the navy and other markets. Heretofore these plans were not favored by the Japanese government.

Trinidad

Sir Thomas Holland, the oil expert assigned by the British government to investigate crude oil production conditions in Trinidad, has completed his visit of investigation and departed. He has finished his report, but it will not be published until it is approved by the Secretary of State. However, two important points on which the expert expressed definite opinion are already known: One is that Sir Thomas Holland stated in his report that the probable life of the oil industry in Trinidad may be measured at roughly another 50 years; the other is that, in his opinion, the leases and covenants, which have been entered into between the Trinidad government and the companies up to now have been singularly illadvised, and far less remunerative to the Colony's finances than have been usual in regard to similar concessions elsewhere in the British Empire, but "that it was now too late," as he stated, "to do anything but locally observe the stupid bargains made."

This statement applies to all the oil-producing companies operating whether American or British owned.

It is understood that Sir Thomas Holland's report will recommend various changes in the present policy governing the grants of oil concessions and the procedure regulating entry upon alienated lands by oil operators, and also in the organization of the Trinidad Mines Department.

These changes in policy, which no doubt will be approved by the Secretary of State, will not be in any way unfavorable to American petroleum interests in Trinidad at present and in future.

From Sir Thomas Holland's unofficial discussions with members of the Legislature, it may be assumed that his report condemns the proposal for imposing an export duty on crude oil, or refined products, as in his view the imposition of an export duty would have a detrimental effect on the refining industry, and would lead to the curtailment of exports, and the abandonment of low grade areas, so that the final result would be a decrease of output and revenue.

New French Laws

The passing of the new law governing petroleum importation in France has caused much satisfaction in French petroleum circles and is expected to prove a stimulus to new initiative and activity in all branches of the petroleum industry, in as much as it forms the basis, not as yet definite and complete, of a stable petroleum regime.

The French Parliament incorporated a clause in the Law of April 4, 1925, creating new fiscal resources capable of balancing the French budget, to the effect that crude oil, its derivatives and residues should only be imported by representatives of the government or under government authorization beginning April 4, 1926. Since that date, French importers and merchants have felt the menace of a state monopoly of petroleum importation. Further legislative measures delayed the application of this clause of the Law of April 4, 1925, until January 1, 1928, but the uncertainty as to what the future petroleum regime might be has caused much prejudice during the past three years to the French petroleum industry. Industrials have naturally hesitated to invest capital in harbor, storage and factory installations, being doubtful as to whether they would be permitted to reap the benefit of such initiative.

In preserving the status quo of importation by fixing an annual percentage for the respective importers, based upon an average for the past five years, the new law will provide for the protection of small importers. This has been one of the principal arguments advanced by its partisans, in as much as the opposition has strongly criticized the increasing power of foreign petroleum trusts on the French market, emitting the claim that such trusts are endeavoring either to absorb or to ruin the small French companies. It is asserted that the new law will respect the existing rights of importers and should provide no grounds for complaints or claims for indemnities.

It will extend the present import license system to fuel oil, thus obliging importers to establish and maintain important reserve stocks of this commodity. It is, therefore, of considerable interest to the national defense.

Safeguarding Interests

By limiting the duration of special licenses to 20 years in the case of crude oil and to three years in the case of derivatives and residues, it is anticipated that the new law will enable the French government to safeguard the interests of French petroleum production and of the refineries which may be established in France.

In a country like France, which produces less than 100,000 tons of petroleum per annum, some 4 per cent of its needs, and which is obliged to import from abroad more than 2,000,000 tons per annum, the question of customs duties and interior taxes on petroleum represents a question of great importance both from a fiscal and economic point of view.

When petroleum was first imported into France in 1862 for lighting purposes, the French government did not delay in encouraging the new industry of refining by establishing protective duties on finished products, in spite of its policy of free trade at that time. After the Franco-Prussian War, it was obliged to increase customs duties on crude oil in order to create new fiscal resources. The refining industry still flourished, however, and its apparent opulence finally produced a revolt in public opinion, which insisted that less advantages be granted to petroleum refiners in France. The protection given to refining was reduced by the tariff laws of 1881, 1892 and 1893, but still remained sufficient to maintain the activities of refiners until 1903. The Finance Law of March 30, 1903, in creating a manufacturers' tax of 1.25 francs per 100 kilos, which more than counterbalanced the slight protection given to the refining industry, resulted in the ruin of this industry in France after 40 years of successful activity.

To the closing of French refineries were attributed many difficulties experienced during the last war. France has since endeavored to bring forward legislative measures to encourage the re-establishment of the refining industry. None of the measures attempted has proved adequate up to the present time, but it is believed that this law, together with the law relative to the regime of petroleum importation of which it is a complement, may have the desired effect.

Russia

The latest official report on the Russian oil industry states that the February output in the three principal fields fell by 6 per cent as compared with January. The returns show the output as 803,552 tons, as against the expected 939,867 tons, or 14.5 per cent less. During the five months October to February the three principal fields yielded 4,410,166 tons of crude oil. Prospecting and drilling in all three fields in February amounted to only 21,486 meters, or 32.7 per cent less than approved. For the period under review, 116,664 meters were drilled against 144,537 meters in the previous year. To make good the shortage in the remaining seven months it will be necessary to drill 20 per cent more than is shown in the official plan.

A message from Baku states that with the exception of 145 pumps for special purposes no new pumps will be made this year. The required 7,500 pumps will be supplied from the local workshops where old pumps are being reconstructed and repaired.

Great Britain

The total imports into Great Britain of crude and refined petroleum during the first two months of 1928 were over 40,000,000 gallons (10 per cent) less than the imports for the corresponding period in 1927. The total for the two months amounted to 363,228,501 gallons, as compared with 403,749,017 gallons imported during the first two months of 1927.

The imports of crude oil for the first two months of 1927 amounted to 95,653,962 gallons, as compared with 116,019,394 gallons for the same period in 1927. The imports from Persia show an increase of 11 per cent as compared with last year, but the imports from "other countries" decreased by 74 per cent.

The imports of refined products during the first two months of 1928 show a decrease of 7 per cent on last year's figure. Gasoline imports, however, increased by 18 per cent and, lubricating oil by 10 per cent with the corresponding period in 1927.

The growing consumption of gasoline is reflected in the imports of this product which for the year to date, up to and including March 26, total about 17,000,000 gallons, or nearly 15 per cent in excess of last year.

Polish Petroleum Institute

Under the initiative of the Lemberg Chamber of Commerce and Industry, and with the active support of the government departments directly concerned, a Polish Petroleum Institute is about to be established. The headquarters of the institute will be at Lemberg, the center of the Galician oil industry. The institute will be organized along lines similar to existing petroleum institutes in France, Great Britain and the United States, and the principal object in view will be the proper coordination of all scientific and research activities within the domains of the Polish oil industry. It is also anticipated that the institute will collaborate in an important manner in the various projects now under consideration in Poland for the development of an intensive exploration program with a view to uncovering new sources of crude supply. The board of management of the new petroleum institute will include as ex-officio members representatives of the Ministries of Industry and Commerce, Public Instruction and War; a delegate from the Lemberg Chamber of Commerce, from the State Mining Council, from the Geological Institute, from the Universities of Cracow and Lemberg, from the Lemberg Polytechnic, from the Mining Academy of Cracow, and, moreover, prominent leaders of the petroleum industry.

Rumania

The general status of the Rumanian petroleum industry, as regards production, exports, ruling prices, etc., at the beginning of this month, may be summarized as follows:

	For January			
	1925	1926	1927	1928
		*(Metric Tons)		
Crude production ...	170,446	224,446	259,994	306,277

*Note—A metric ton is approximately 7.3 bbls.

On March 1, 1928, Moreni crude (nonparaffinous) was quoted at from Lei 16,600 to 16,900 per carload, of 10 metric tons, (paraffinous) at from Lei 13,500 to 13,800, and Baicoi crude at Lei 19,200; with exchange at Lei 163. to the dollar.

	January	
	1927	1928
Exports—	(Metric Tons)	
Gasoline	30,033	14,290
Refined oil	53,553	29,684
Lubricating oil	9,087	3,741
Residues (gas and fuel oils)	44,857	49,136
Crude oil	1	.....
	137,531	96,851

Oh, the Tank Car Leads a Jolly Life

Nothing to Do but Keep on the Jump, Be Damned for Things It Didn't Do and Face Possible Disaster at Every Turn

By Thomas F. Smiley

There were 144,898 tank cars scudding hither and yon over the face of the United States in 1927, each of them a symbol of worried, unsettled existence and stark homelessness. If a new tank car only could see what lies ahead it might wish it were a parachute jumper, a one-armed paper hanger, a tool-pusher or almost anything whose earthly pathway is marked by relatively calm and placid days. But cocky and vainglorious as it emerges from the car shops in the splendor of its shining paint and the youthful strength of its riveted joints, it fares forth eager for adventure. And by the Lord Harry it gets what it's looking for.

Such a life! Here today, there tomorrow. Grease, gum, grime. Sudden shifts from blistering heat to icy cold. Possibility of disaster and annihilation always just around the corner. Fear-awakening profanity and damnation for mishaps that were a workman's own fault. And worst of all perhaps, undesired by the very men who bought and paid for it. The best that can be said for the tank car's fevered career is that for those who like that kind of life why that is the kind of life they will like.

Of the 144,898 tank cars mentioned, 130,913 were owned privately and 13,985 were owned by railroads. Most of the first-named group were the property of various large oil companies, though it might be mentioned in passing that almost 40 products are transported in tank cars and some of them come from such unromantic lines of business as molasses, asphalt, chemicals, even pickles; but the great majority of them carry crude petroleum or some of its liquid products.

Here's one of the humiliating things in the life of a tank car—at least if it is one of the 125,000 or so owned by oil companies. It is looked upon as a sort of unavoidable affliction. It is an unwanted child. Whether there is any logical reason for this semihostile attitude on the part of the oil companies or not, it unquestionably exists. Perhaps it is rooted in the easily understandable feeling that anything in the way of rolling stock is something for the railroad man—not the oil man—to worry over.

A Necessary Evil

Speaking before the Texas Car Foreman's Association of Fort Worth, Tex., C. H. McBurney, master car builder of the Transcontinental Oil Co., said:

"The owning of tank cars is considered a necessary evil by the refiners. Competition compels us to own our own cars, and since we own them it is our desire to operate them as economically as we can. As tank cars operate over various railroads the same as ordinary freight cars, they must be built under specifications approved by the American Railway Association and the safety appliances must conform with the Interstate Commerce Commission regulations. Furthermore, as tank cars are used to transport inflammable liquids and gases, they also must be made to meet the Bureau of Explosives requirements."

There are three standard sizes of tank cars, besides compartment cars, which are also standard equipment. The sixes, as they are called, have a capacity of 6,000 gallons; the eights, 8,000 gallons, and the tens, 10,000 gallons. A few twelves, holding 12,000 gallons, are made, but they are not standard equipment. The compartment cars, usually employed for transporting lubricating and motor oils, are so designated because they are divided into two, sometimes three, compartments for the accommodation of buyers who do not want an entire car of a product.

A six tank car costs about $1,900; an eight about $1,700, and a ten about $1,950. Comment sometimes is stirred by the fact that a six costs more than an eight and that a ten costs only $50 more than a six. In explanation of this it is pointed out that more eights are used than either sixes or tens and that ordinarily the mechanical setup in the car shops is the one needed for making eights. The result is that when sixes or tens are ordered an expensive change in the setup is necessary. The compartment car costs about $2,400.

Six Classes of Cars

There are six different classes of tank cars:

Class 1. For general service, with wooden or steel underframes or without underframes, built prior to 1903.

Class 2. For general service, with steel underframes or without underframes, built between 1903 and May 1, 1917.

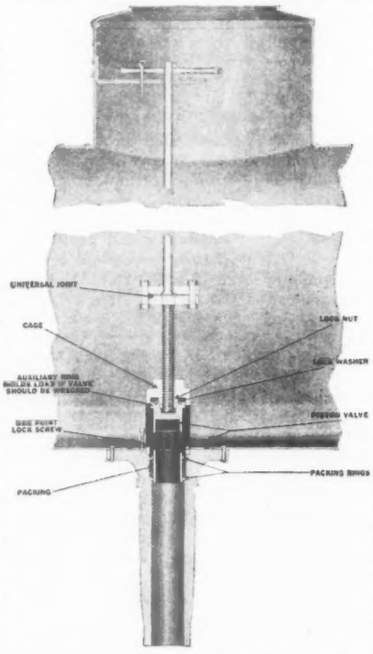
Class 3. For general service, built after May 1, 1917.

Class 4. Insulated tank cars for transportation of volatile inflammable products whose vapor pressure at 100 degrees Fahrenheit exceeds 10 pounds per square inch, built after May 1, 1917.

Class 5. Insulated tank cars of specially heavy construction, built after January 1, 1918, for transportation of liquid products whose properties are such as to involve danger of loss of life in the event of any leakage or rupture of tank.

Class 6. Tank cars carrying three or four helium gas tanks.

While the major oil companies own most of their tank cars, they are obliged to lease cars at peak periods. Small refineries find it more economical to lease than to tie up capital in purchase. One of the largest of the leasing concerns owns more than 33,000 tank cars which it rents to users and handlers of petroleum and its products. It has repair shops in 27 cities of the United States, besides shops for assembling new cars in three others. Another, which manufactures as well as leases, has its principal shops in Chicago and owns about 17,000 tank cars.



The Young outlet valve for tank car bottoms. The piston rises and descends through the action of a threaded stem operating through a threaded opening in the valve housing. The handle by which the valve is operated is seen inside the dome.

Although the plates for making tank cars usually are bought from steel companies and assembled in shops owned and operated by different concerns like the American Car & Foundry Co., North American Car Corp., Petroleum Iron Works Co., and others, the Bethlehem Steel Co. not only makes the plates, but builds the tank cars, too. Rental periods may be for a single trip or for a long term of years.

There are 223 Things There

The major parts of a tank car are the trucks, the underframe and the tank, this last surmounting the underframe and acting as a body. To the casual observer there doesn't seem to be much else to it, but the fact is the ordinary tank car contains 223 separate and distinct pieces. You ask a car builder what these things are and unless you flag him he'll reel off a list of names that sound like a machine shop inventory—tank band, jacking pad, grab iron, pawl plate, outlet leg, manhole, floating lever. (This last, they say, has no particular analogy to the floating kidney that some folk have lurking about their insides.)

The practice of building tank cars with the plates set vertically is being supplanted by the more economical method of using long plates set longitudinally. In the old type, with the vertical seams, the tank was bolted to the underframe and there was much greater tendency to leakage than with the newer type, with the longitudinal seams, in which the tank is riveted to the underframe. The bolts formerly used were believed to increase the ability of the tank to withstand the strain of expansion and contraction. These bolts worked loose at the points where they were fastened to the tank and leaks started. The rivets now used hold the tank more rigidly and experience has shown that while they reduce the loss from leakage they do not increase the trouble from expansion and contraction.

For each 6,000 gallons (or fraction) of a tank car's capacity a safety valve must be provided on the dome. Thus, an eight tank (8,000 gallons) is provided with two such valves. These valves are to relieve pressure in case of dangerous expansion of gas in the tank. Disastrous explosions have resulted from this gas expansion. Two of these accidents—one at Memphis, Tenn., and one at Ardmore, Okla.—cost many lives. In each of these cases the tank car was provided with safety vents, which are required by Bureau of Explosives regulations, and the precise cause of the accidents is said never to have been definitely established.

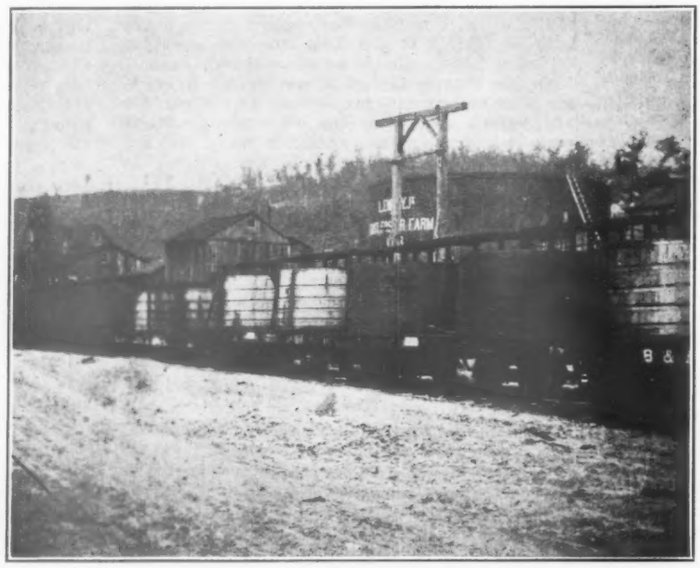
Here It Comes

When the tank car, resplendent in its spotless paint, artistically stenciled and tested to the last rivet, emerges haughtily from the shops, it is taken to the nearest loading point. On this journey the car owner must pay freight to the railroad company. After that the railroad pays the oil company a fixed rate per mile (called mileage) for the use of the car and the oil company pays for transportation of the car's contents, the rates for this service being determined by the Interstate Commerce Commission. The railroad is responsible for the car and its contents in their various wanderings, just as it is responsible for the safe carriage of any freight.

At the point where the car receives its first load (and wherever it receives all subsequent loads for that matter) it is "set to the rack," which means that it is placed in position for filling at the loading rack.

Prior to the filling process a man goes from one empty car to another along the loading rack and removes the caps from the ends of the outlet legs at the bottom of the tanks. Another man removes the cover of the dome at the top

(Continued on Page 116)



Some tank cars of the 1870 model, made by setting wooden tanks on ordinary flat cars on the old Oil Creek railroad in Pennsylvania. On the big tank in the background is discerned the name of Lewis Emery, Jr., a young man at the time this picture was taken, who became one of Pennsylvania's wealthiest oil operators.

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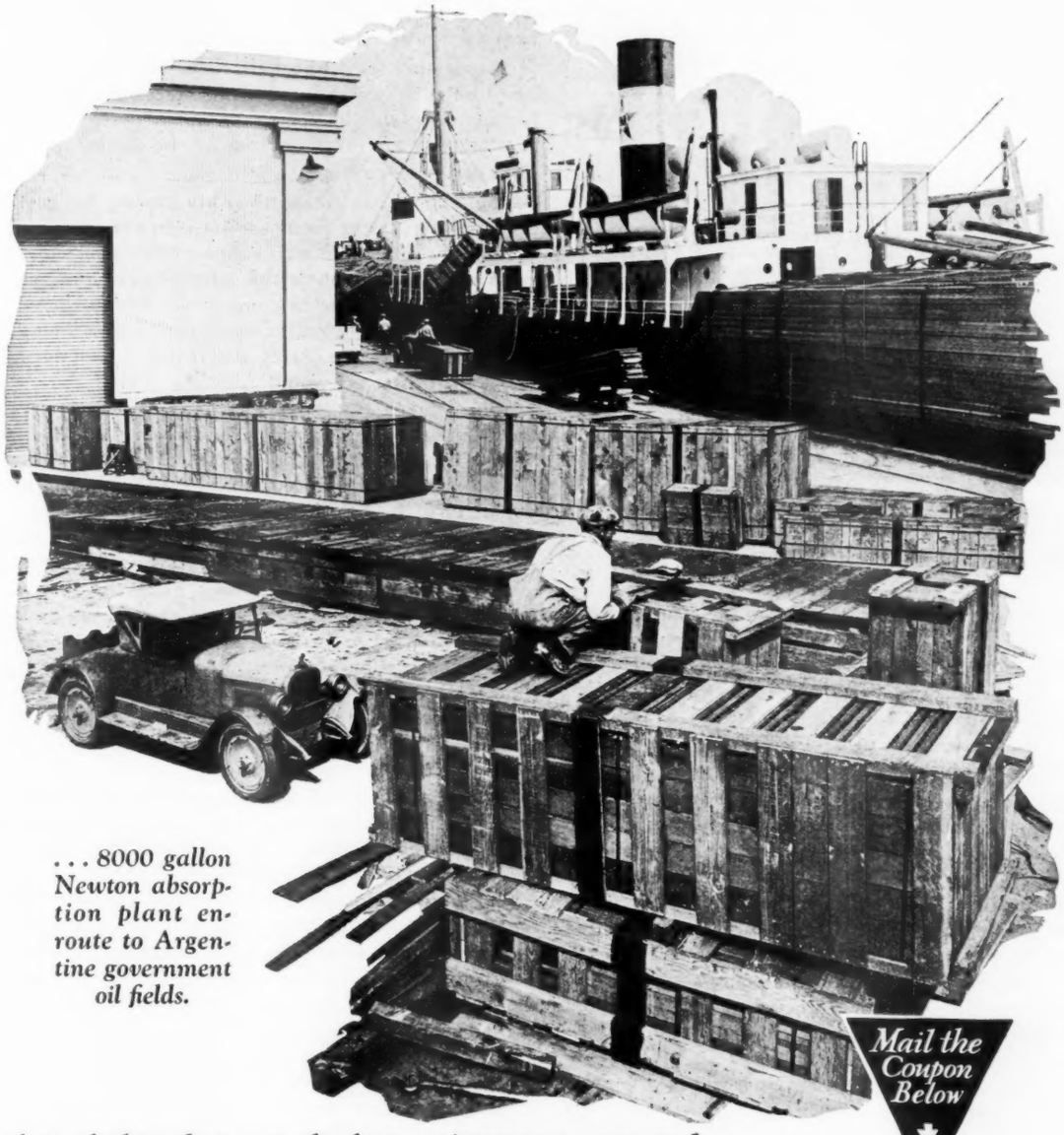

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THE GAS INDUSTRY AND THE PUBLIC

Several of the speakers at the annual meeting of the Natural Gas Department of the American Gas Association at Dallas called attention to the danger to the public and to the natural gas industry of the promotion of impractical gas projects.

The remarkable development of the natural gas industry in the Southwest and the facility with which natural gas can be transported by modern equipment to unprecedented distances has aroused a widespread popular interest, both in cities already supplied and in those which have never enjoyed the advantages of natural gas.

The effect has been to create a public readiness to listen to any or all sorts of gas promotion projects with little or no investigation or understanding of the facts.

The public is always willing to believe it is being abused or oppressed. Nine-tenths of the political oratory is based upon that theory. The voter is eternally being incited to resent being downtrodden or urged to save the country. When he is told he is paying too much for his gas or his gasoline, his meat or his eggs, the average man thinks he has found a defender and swallows everything he is told without a word of inquiry.

Anyone who asks him to investigate or tries to tell him the facts is likely to be denounced as a tool of the common enemy. It is usually too late to attempt answering such attacks after they have been made because the popular mind is in no mood to listen. The most effective method is to forestall such attacks by constant education of the public so that right thinking will provide its own answer.

This is the course being followed by some of the most successful public relations departments of leading gas companies. There was a time in the gas business as in many, if not most, others, when business methods were considered no concern of the public. Although modern business has tried hard to get away from that attitude of indifference to public opinion it is still suffering from the consequences of that old policy which survives in a lingering popular suspicion and resentment only too easily reawakened.

That is the genesis of many of the impractical gas projects which were deplored at the Dallas convention, projects, as one speaker said, "on such a grand scale as to stagger the imagination, pipe lines of large capacity both projected and laid into markets already amply supplied with natural gas as well as into new markets, having back of them gas reserves which on careful analysis are apparently sufficient for but a brief portion of the time required to amortize the pipe line investment.

"We have seen the promoter who has no gas, no contracts for gas, no money, no financial connections, and no knowledge of the gas business, glibly quote rates and secure franchises, creating an expectancy of rates in the public mind that could never be realized and in some cases preventing the materialization of natural gas service to many communities that could have been served had it not been for the activities of these promoters."

Experienced management has made the natural gas industry, despite the hazard of supply, an attractive investment, and the opening of new fields has been the opportunity for promotions which have not always taken account of the factor of management or indeed of costs or reserves.

Most consumers think they are paying for gas when what they are actually paying for is service. In the same way many of these promotions and those who support them overlook essential calculations which would show the folly of their projects.

The mere promise of competition which cannot survive or permanently benefit the public may prove worse than a delusion in that it may so handicap existing enterprise it may not be able to render service it otherwise would.

The remedy suggested is the right one, to show the public the facts so the people can judge for themselves. The American public, as has been said in other connections, is fundamentally fair-minded, open to conviction if correctly informed and convinced of the authority of its information.

One of the most common forms of popular misunderstanding of economic questions is failure to consider transportation costs. It may be doubted if ten men in a hundred, discussing the cost of raw material in any commodity in general use and the price of the finished product to the consumer, have any idea of the proportion that transportation occupies in the final cost. Yet the cost of pipe lines, compressor stations, construction and maintenance of gathering and distributing systems without which the gas itself would be unavailable to the consumer, are of primary importance in any consideration of gas projects.

The possible sales, peak loads, the market for industrial purposes, and other essential factors must all be taken into calculation as well as the estimated reserves and allowances for depletion and amortization of the investment.

A public uninformed about these elements, thinking only of natural gas in a field hundreds of miles away, is not qualified to judge either the existing service or the promise of a competitor.

For its own protection as well as for the protection of the public the Natural Gas Department should set about the compilation of such information, contributed by and representing the entire industry, so that wherever occasion arises it may be in position to place the authoritative facts before the public.

But it will be a mistake to wait until the necessity arrives. This information should be offered to the public, not as an answer to any definite attack, but as a matter of present and general interest.

Instead of allowing itself to appear on the defensive the industry should rather present its case frankly and voluntarily as a basis for good will and co-operation for the common good.

A great deal has been accomplished in the past few years in interesting the public in the service rendered by the gas companies. The same constant publication of the facts about the managerial problems of gas company operation would in time educate public opinion so that impractical promotions would be subjected to intelligent popular scrutiny before they could do any harm to existing enterprises or the community.

As Chairman N. C. McGowen said, the natural gas industry is "proud to know we have a well-conducted, scientifically managed industry, honestly endeavoring to furnish its consumers with the best possible natural gas service." There is, as he said, "no industry that will not benefit by securing the confidence of the public if this confidence is deserved."

That spirit translated into action will be found a sufficient remedy for the conditions discussed at Dallas.

Along the trail of the lonesome pines
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ALUMINUM TANKS BEING TESTED TO LEARN EFFECTS OF CORROSION

By J. O. Chesley
Aluminum Co. of America

Since the losses caused by corrosive action of the sulphur-bearing oils and gases from the wells of the limestone areas of West Texas have become apparent, various remedies in the form of metals or special alloys have been tried.

A metal suitable for these conditions must be low in solution value and have as nearly uniform electric potential over its entire surface as possible.

Corrosion by pitting may be considered as of two distinct types.

First: Electric couples are formed on the surface of a metal where adjacent areas within the piece are of markedly different density or composition. This condition leads to accelerated corrosion by galvanic action between these areas of different potential when in the presence of an electrolyte such as brine from the well.

Iron sulphide scale in contact with steel in the presence of an electrolyte such as brine forms an active galvanic cell and the metal in the equipment usually is destroyed because it is anodic to the scale.

To combat this kind of corrosion much research work has been done and numerous metals tested.

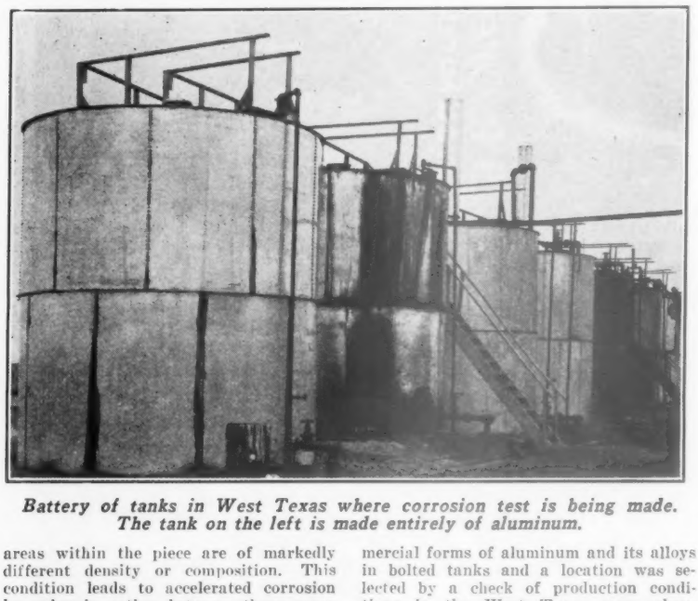
Lease Tank Corrosion

An item of equipment giving a great deal of trouble from the above types of corrosion is the bolted and welded steel lease tank, as well as the larger riveted variety.

Parkersburg Rig & Reel Co. and the Aluminum Co. of America therefore jointly decided to test out some of the commercial forms of aluminum and its alloys in bolted tanks and a location was selected by a check of production conditions in the West Texas area where corrosion had already made itself evident in well equipment and lease tanks, the Gulf Production Co. kindly permitting us to conduct the test on its State-Lassiter Lease in Crane County, Texas.

Tanks were fabricated by regular pro-

(Continued on Page 159)



Battery of tanks in West Texas where corrosion test is being made. The tank on the left is made entirely of aluminum.

TEXAS PIPE LINE CO. ANNOUNCES IMPORTANT CONSTRUCTION PLANS

By Nell Williams

HOUSTON, Tex., May 15.—The Texas Pipe Line Co. of Texas Tuesday made known its plans for two 8-inch pipe line building projects, involving a total of approximately 300 miles of line. One of these projects connecting the Corsicana station on the Dallas-to-Humble trunk line with the San Augustine station on the Louisiana and Arkansas-to-Port Arthur main line will be started at once. The other, providing an extension from Electra, the northern terminus of its North Texas line, to Gray County, in the Texas Panhandle, a distance of 150 miles, still is in the formulative stage.

The Corsicana-San Augustine line is being laid to relieve the load on the Dallas-to-Port Arthur system, and will provide an increase in the capacity to 50,000 bbls. daily.

The Dallas-Port Arthur system, which is fed by a line to the North Texas fields as well as one to the Oklahoma fields, is being crowded to capacity. The new line will divert 10,000 bbls. to the Louisiana-Arkansas line to Port Arthur, the latter being a line not being used to capacity. The distance between the two lines from the Corsicana to the San Augustine stations is approximately 150 miles, but it will not materially increase the distance of the oil flow from Dallas to Port Arthur. The present Dallas-to-Port Arthur system, routed by way of Humble, is not in an air line, so a line across to the Louisiana-Arkansas system straight into Port Arthur furnishes nearly as direct a route.

To further increase the capacity of the Dallas-Port Arthur system, another 8-inch loop line will be laid between Dallas and Corsicana, giving the company three complete 8-inch lines between these two points.

Surveys already are under way for the Corsicana-San Augustine line, and construction will begin as soon as there are complete, perhaps in the next few weeks. Present plans do not call for additional pump stations, although the stations to Corsicana and San Augustine will have to be enlarged to care for the increased capacity.

Line to Panhandle

The Electra-Gray County 8-inch line has not been determined on definitely, and surveys have not been made; but such a project, according to Texas Pipe Line Co. officials, virtually will be a necessity before long in view of the company's rapid expansion. It is partly with this in view that the Corsicana-San Augustine connection is made, although the company

(Continued on Page 155)

HIGH SPOTS IN FIELD NEWS

Louisiana Oil Refining Co.'s No. 1 Davis, Section 23-21-10, Cotton Valley district, North Louisiana, was a disappointment. A big well in the Trinity sand was hoped for, but instead of oil it produced gas—17,000,000 feet per day.

The Earlsboro Pool in the Seminole Field, Oklahoma, was extended half a mile by the Skelly Oil Co. and Atlantic Oil Producing Co.'s No. 1 Cherry, SW NW Section 6-9-6, which started at 60 bbls. per hour. In the restricted district south of Little River (Seminole Field) the Carter Oil Co. completed a 3,925-bbl. well (an offset) in Section 12-7-6, which was pinched in to 100 bbls. a day.

The Richfield Oil Co.'s No. 6 Denni in the Long Beach, California, Field, is the deepest large producer of oil yet completed. At 7,409 feet it is good for 1,475 bbls. of oil and 1,500,000 feet of wet gas. The well was drilled with rotary tools in the remarkable time of 130 days.

O. W. Killam has opened what appears to be an important pool in the Mirando district in southwest Texas. His No. 8 Bruni, which made 1,300 bbls. the third day. Another important well in that field is the Magnolia Petroleum Co.'s No. 1 Valdez in the Cole Field which started at 450 bbls. The wells are miles apart.

Lea County, New Mexico, operators are keenly interested in the significance of the Gibson & Johnson well in northern Winkler County, Texas, and the showings of gas and oil in the Marland Oil Co.'s test a few miles north of it and in the gas and oil showings of Midwest Refining Co.'s No. 1 State, 40 miles north and east of the Marland test.

The Amarillo, Texas, gas field is credited with an open flow capacity of 1,000,000,000 feet.

Gulf Coast production was increased by two 1,000-bbl. wells in Spindletop, and 3,000-bbl. well at South Liberty and good wells in Pierce Junction and Blue Ridge.

The largest gas well yet completed in the Cartersville area, Bossier Parish, Louisiana, is making 40,000,000 feet a day.

Late Field News

OKLAHOMA

The Greater Seminole Field produced 277,020 bbls. for the 24 hours ending Tuesday morning, 7 a. m. The production by pools was:

Little River	45,718
Bowlegs	67,405
Earlsboro	95,179
Seminole	53,519
Searight	15,199
Total	*277,020

*Barrels from 1,093 wells.

The Skelly Oil Co. and Atlantic Oil Producing Co.'s No. 1 Cherry, SW cor. NW SW, Section 2-9-6, was shot with 30 quarts and is flowing 180 bbls. per hour from the same total depth 4,110-4,123 feet.

In the Little River area, the Roxana Petroleum Corp.'s No. 1 Caeser, NW cor. NE SE, Section 11-7-6, is bailing after running the 8-inch casing at 4,288 feet. It will be drilled deeper. In the restricted area in Township 7-6, the Magnolia Petroleum Co.'s No. 1 Harjo, NE cor., Section 14-7-6, is drilling at 3,800 feet. This is the west offset of the Snowden & McSweeney well. T. B. Slick's No. 1 Williams, NE cor. SE NE, Section 15-7-6, ran the 6-inch casing at 4,185 feet. Roxana Petroleum Corp.'s No. 1 Hotulka, NW cor. NE NW, Section 23-7-6, has set the casing at 4,200 feet. East of the restricted area, E. W. Whitney's No. 1 Harjo, NE cor. NW NE, Section 25-7-6, topped the Mayes formation at 3,975 feet, and is drilling at 4,015 feet.

In the Pearson-St. Louis area, Pottawatomie County, the Prairie Oil & Gas Co. has two new wells: No. 1 Ellison, NE cor. SW, Section 25-7-4, had the Simpson sand 4,170-4,231 feet, and made 1,235 bbls. the first 24 hours while it was being agitated; No. 1 Desmond, SE cor. NW, Section 25-7-4, is drilling in the Viola lime at 4,225 feet with 1,000 feet of oil in the hole.

CENTRAL AND WEST TEXAS

FORT WORTH, Tex., May 15.—Danciger's No. 1 John Sealey, center Section 93, Block A, G.&M.M B.&A. Survey, had 600 feet of water at 3,170 feet, a show of oil at 3,195 feet, a show of gas at 3,200 feet and is drilling at 3,235 feet. In Howard County the F. H. E. Oil Co.'s No. 1-D Roberts, NW Section 136, Block 29, made 125 bbls. per hour for 19 hours from pay at 2,950-3,003 feet.

Marland Oil Co and Texon Oil & Land Co.'s No. 2-A Settles, NE Section 158, Block 29, had pay at 1,345-68 feet and was estimated to be good for between 9 and 15 bbls. per hour. The well is 2 miles northwest of No. 1-A.

Winkler County production May 13 was 139,625 bbls. and 143,476 bbls. on May 14. The reason for the drop is because one company's treating plant is shut down and seven of its wells are off production.

New gauges of Hendricks Field show a potential production of 643,973 bbls. There are now 82 producing 40-acre units. The new potential is an increase of approximately 120,000 bbls. over the first potential estimate. Several of the wells were not gauged the first time or were gauged under pressure.

NORTH LOUISIANA

SHREVEPORT, La., May 14.—Louisiana Oil Refining Corp.'s No. 1 Davis, C NE NE, Section 23-21-10, Cotton Valley district, Webster Parish, was brought in Sunday estimated at 17,000,000 feet of gas at a total depth of 4,700 feet as the fourth completion in the new Trinity horizon in that territory. It was almost as great a disappointment as the Magnolia Petroleum Co.'s No. 1 Cole, which was the third completion in the new pay, and the first after the discovery well.

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Eubanks Pool Aided by Completions

Brown County Reports Three Semiwildcat Producers. Coleman Active. Decline in Wichita Falls, Ranger and Panhandle

By James H. Dameron
Fort Worth Bureau, The Oil and Gas Journal

FORT WORTH, Tex., May 14.—Brown and Coleman County developments overshadowed those in the other districts of North Texas when the former reported the completion of three semiwildcat wells that will result in a small sized drilling campaign in the sweet oil district. Production of Ranger, Wichita Falls and Panhandle districts skidded and was down 2,701 bbls. No indications of a recovery of the loss are in sight. Wichita Falls district reported the heaviest loss due to the general decline of several flush wells and the older production in the district. Panhandle has been dropping steadily for weeks and that decline is expected to carry on for some time.

The Eubanks Pool, southwest of Cross Cut in Brown County, was extended a quarter of a mile northwest when L. G. Bradstreet and Mahlstedt Oil Co.'s No. 1 Eubanks, in the Robert Mitchell Survey No. 141, was completed as a 400-bbl. well. The well had dry sand at 1,210-12 feet and oil sand at 2,212-17 feet. It was shot with 15 quarts and made 27 bbls. the first hour and completed as a 400-bbl. well.

Most of the drilling in this new small spot has been south of the discovery well. The extensioner, however, has resulted in eight new locations being made in that territory and drilling is expected to be carried on rapidly in developing that part of the pool.

Baker and Hodges have resumed drilling at their test a half mile south of the discovery well after reaching an agreement with Cranfill & Reynolds concerning lease lines. According to reports from the field, Baker and Hodges' well was located on a 9-acre strip between their lease and the Cranfill & Reynolds lease.

In the western part of the Hutton-Curry Pool, Jay Hawk Oil Co. completed a 90-bbl. well after getting two sands in its No. 6 Boysen. Pandem Oil Co. completed the best well in that pool when its No. 5-B Hutton made a 100-bbl. well after a 5-quart shot. In the Clark-Buffalo Pool, Henshaw Oil Corp. completed a 125-bbl. well.

W. T. Daniels and associates' No. 1 Moody, in the J. Scott Survey No. 665, just west of Santa Anna in southeastern Coleman County and 2 miles south of the Breneke Pool, was completed this week making 19 bbls. per hour from sand at 1,840-45 feet.

Drilling in the immediate area of the well is expected to be fairly rapid. Most of the acreage is cut up in small leases and owned by independent operators. Acreage in that area, as well as royalty, is reported to be changing hands at a fast clip.

Wichita Falls District

One of the most interesting developments in the Wichita Falls district was the completion of Waggoner Refining Co.'s No. 3-E Waggoner, in Section 30, Block 4, Wilbarger County, which came in making 700 bbls. from sand at 2,311-30 feet. The southeast portion of Wilbarger County is the most active in the Wichita Falls district with drilling extending east to the Wichita County line. Most of the drilling is in the area east of the Rock Crossing Field.

Ranking close to the Waggoner Refining Co.'s well, Fain & McGaha completed their No. 1 Waggoner for a 541-bbl. well at 2,295 to 2,308 feet. It is also in southeast Wilbarger. With the exception of those two wells the remaining wells completed were either average pumpers or dry holes.

Northeastern Young County continues to be another bright spot in the Wichita Falls drilling picture. In the Loving Pool, the best well was Riggs and associates' No. 8 McKinley, which made 295 bbls. from pay at 567-82½ feet. The remaining completions in the pool were small pumpers with the exception of one well which made 113 bbls.

Wildcatting around the Loving Pool is going ahead at a rapid rate although another bunch of failures was reported during the past week from that area.

Consummation of a deal involving the transfer of a tract of approximately 625 acres in the South Bend Pool, Young County, was made when Roxana Petroleum Corp. sold the property to Charles J. Atkinson, J. D. Sandefer, Jr., and M. E. Daniels for a consideration reported to be well above $100,000. There are 23 wells on the lease making around 130 bbls. daily. All of the wells were drilled several years ago.

Drill in Panhandle

The past week was dull so far as the Panhandle was concerned. No new developments of marked importance were reported. Field work continues to show a steady gain with most of the work going on in Gray County. Wildcatting throughout the many counties embraced in that area is on an upward trend. Two more counties, whose operations have been idle several months, were back in the active list and the wells recently started up are expected to be carried on to contract depths without any further hitches.

For the first time in months the Panhandle completion report was minus an oil or gas well. All three of the completions reported were failures. Two were in Gray County, one in the area recently opened by the Ray and Massie well in Section 51, Block 25, and the other was a 3,432 foot test which was temporarily abandoned. The remaining completion was a test in Motley County which was spudded and later abandoned.

PANHANDLE DISTRICT
Week Ended May 12

Gray County

Pampa Oil Co.'s No. 1 W. R. Campbell, temporarily abandoned at 3,432 feet. Plains Drilling Co.'s No. 1-B Chapman was dry and abandoned at 2,761 feet.

Motley County

Exploration Co.'s No. 1 Burleson was spudded and abandoned.

NORTH TEXAS

Estimated Daily Average Production for the Week Ending May 12

Panhandle—	
Carson County	7,325
Gray County	18,525
Hutchinson County	40,895
Moore County	190
Potter County	25
Wheeler County	1,120
Total this week	68,080
Total last week	68,590
Decrease	510
Wichita Falls District—	
Archer County	22,261
Baylor County	90
Clay County	527
Cooke County	3,089
Jack County	1,487
Montague County	9,018
Throckmorton County	1,010
Wichita County	27,403
Wilbarger County	12,883
Young County	7,612
Total this week	85,380
Total last week	87,010
Decrease	1,630
Ranger District—	
Brown County	12,755
Callahan County	3,750
Coleman County	1,810
Comanche County	1,286
Palo Pinto County	425
Ranger	7,142
Shackelford County	9,895
Stephens County	8,195
Total this week	45,252
Total last week	45,813
Decrease	561
Grand total this week	198,712
Grand total last week	201,413
Decrease	2,701

WICHITA FALLS DISTRICT
Week Ended May 12

Archer County

Archer Drilling Co.'s Thompson was dry and abandoned at 1,650 feet. F. H. Gohlke and others' No. 2 Jones and Warden made 55 bbls. at 1,564-67 feet. C. E. McCutchen's No. 5 Perkins and others made 12 bbls. at 1,018-28 feet. Sun Oil Co.'s No. 1 Andrews was dry and abandoned at 1,510 feet. United Production Co.'s No. 1 Kemp & Kell made 10 bbls. of oil and 8 of salt water at 765-75 feet. L. T. Burns' No. 1 Ikard was dry and abandoned at 1,502 feet. Humble Oil Co.'s No. 1 Hamilton-A made 31 bbls. at 1,117-20 feet and drilled to a total depth of 1,145 feet. F. P. Rose's No. 1 Crawford-A was dry and abandoned at a total depth of 1,350 feet.

Clay County

Ohio Mid-Cities Corp.'s No. 1 Wright was dry and abandoned at 1,487 feet.

Cooke County

T. H. Lawson and others' No. 1 McFadden was dry and abandoned at 1,381 feet. Oil Operators Trust Co.'s No. 1 Kleiss-A made 15 bbls. at 1,671-98 feet. Simms Oil Co.'s No. 1 Mitchell was dry and abandoned at 1,806 feet.

Jack County

Panhandle Refining Co.'s No. 1 Daugherty made 145 bbls. at 2,957-67 feet.

Knox County

Deep Rock Oil Co.'s No. 1 Coffman was dry and abandoned at 4,516 feet.

Montague County

Arco Oil Co.'s No. 5 Lay and others made 15 bbls. at 800-17 feet.

Wichita County

Coleman, Cappock & Electric Gulf's No. 1 Watkins, dry and abandoned at 897 feet. Douglas Production Co.'s No. 2 Douglas-B made 18 bbls. at 1,045-57 feet. The same company's No. 3 Douglas-B made 6 bbls. at 1,053-54 feet. Its No. 4 Douglas-B made 6 bbls. at 1,049-58 feet. T. F. Hunter's No. 33 Waggoner Brothers was dry and abandoned at 1,750 feet. Red River Oil Co.'s No. 94 B. A. Bywaters was dry and abandoned at 397 feet. The Texas Company's No. 352 Waggoner made 26 bbls. at 1,721-32½ feet. F. E. Van Warmer's No. 10 Fisher was dry and abandoned at 871 feet.

Wilbarger County

Fain-McGaha's No. 2 Waggoner made 541 bbls. at 2,295-2,308 feet. Hines and others' No. 1 Carter was dry and abandoned at 2,452 feet. Murchison Oil Co.'s No. 2 Fluhman made 12 bbls. at 1,475-89 feet. Phillips Petroleum Co.'s No. 7 Waggoner-L pumped 35 bbls. at 2,365-86 feet. The same company's No. 1 Waggoner-RR made 35 bbls. at 2,365-74 feet. Waggoner Refining Co.'s No. 3 Waggoner-E made 700 bbls. at 2,311-30 feet.

Young County

Atlantic & Williams' No. 1 Smith was dry and abandoned at 602 feet. Bullington Lee & Pendleton's No. 3 Boone made 50 bbls. at 471-500 feet. Byron's No. 1 Edwards was dry and abandoned at 867 feet. Cunningham & Hawkin's made 20 bbls. at 508-28 feet. Forbess and others' No. 1 Washburn was dry and abandoned at 778 feet. Goldsmith's No. 1 Petty & Miller was dry and abandoned at 712 feet. Gwynn's No. 1 Kunkel made 40 bbls. of oil and 8 bbls. of water at 1,143-57 feet. Hammon & Garrett's No. 1 Hunt was dry and abandoned at 1,205 feet. Kleiner and others' No. 7 Langston made 25 bbls. at 575-90 feet. Kruger and others' No. 1 Johnson was dry and abandoned at 903 feet. Parker and others' No. 3 Johnson was dry and abandoned at 608 feet. Pennell Oil Co.'s No. 6 Boone made 113 bbls. at 505-30 feet and their No. 7 Boone made 20 bbls. at 472-

(Continued on Page 145)

WILDCAT OPERATIONS IN TEXAS PANHANDLE

Week Ending May 12, 1928

Company, Well, Farm, Name, Section and Block—	Remarks—
BRISCOE COUNTY	
C. S. Rice's No. 1 J. C. Anderson, SE cor. NW NW, Sec. 22, Blk. B-3, B.S.&F. Sur.	S.D., 1,620 ft.
CARSON COUNTY	
Amarillo Oil Co.'s No. 1 E. S. Polling, C NE of N 80 acres of NE, Sec. 12, Blk. Y-2, B.&B. Sur.	Drlg., 2,825 ft.
Denson et als' No. 1 W. E. Cobb, 930 ft. from N line, 380 ft. from E line, W half NW, Sec. 184, Blk. 3, I.&G.N. Sur.	Spudded and S.D.
Empire G. & F. Co.'s No. 1 J. C. Noel, C SW, Sec. 41, Blk. 4, I.&G.N. Sur.	Set 8-in. csg., 2,157 ft; drlg., 2,265 ft.
Empire G. & F. Co.'s No. 1 E. W. Sheridan, C NE, Sec. 243, Blk. B-2, H.&G.N. Sur.	24,000,000 ft. gas 2,651-76 ft; drlg. 2,930 ft.
Gulf Prod. Co.'s No. 1 W. E. Cobb, SE cor. S half NE, Sec. 202, Blk. 3, I.&G.N. Sur.	Drlg., 2,640 ft.
Marston Oil Co.'s No. 1 J. L. Noel	S.D., 3,191 ft; 1,000 ft. oil in hole from lime and G.W., 3,189-91 ft.
The Texas Co.'s No. 1 R. S. McConnell, C N ½ of NE, Sec. 46, Blk. B-4, I.&G.N.	Location.
Skelly Oil Co.'s No. 8 H. Schafer, NE SW SW, Sec. 88, Blk. 4, I.&G.N. Sur.	T.P., 3,184-92 ft. in lime; G.W., 3,197-3,200 ft; T.D., 3,250 ft; plugging back to 3,200 ft.
CASTRO COUNTY	
Colorado O. & R. Co.'s No. 1 M. Slemmons, SW cor. Sec. 73, Blk. M-17, B.S.&F. Sur.	Rig blown down.
Mystery Oil Co.'s No. 1 J. I. Crum, SE cor. NE, Sec. 333, Blk. M-6, S.K.&K. Sur.	S.D., 510 ft. for csg.
CHILDRESS COUNTY	
C. L. Sloane et als' No. 1 B. P. Smith, Sur. 49, F. P. Knott lands	Set 6-in., 2,902 ft; S.D., 4,005 ft.
COTTLE COUNTY	
Explin. Co.'s No. 1 Richards	Spudded and S.D.
Explin. Co.'s No. 4 Matador Land & Cattle Co., C, Sec. 46, J. H. Stephens Sur.	Rig on ground.
DALLAM COUNTY	
Marland Oil Co.'s No. 1 A. M. James, C SW W half, Sec. 21, S. H. McElreath Sur.	500 ft. wtr. in hole; drlg., 4,211 ft.
Marland Oil Co. et als' No. 1 Capitol Synd., Sec. 36, Blk. 18, Capitol Synd. land	S.D., 3,500 ft.
DONLEY COUNTY	
A. T. Drlg. Co.'s No. 1 F. E. Harrington, Sec. 39, Blk. 3-C	1,200 ft. wtr., 3,115-22 ft; show gas, 3,140-60 ft; dry G.W., 3,200-93 ft; cmt. 5-in., 3,510 ft; S.D., 3,685 ft.
Martin & Watson's No. 1 W. J. Ball, Sec. 22, Blk. E, D.&P.R.R. Sur.	Cellar.
FLOYD COUNTY	
Explin. Co.'s No. 1 S. H. Boone, C. C. H. Johnson Sur.	Fish., 1,910 ft.
Explin. Co.'s No. 1 Land & Cattle Co.	Drlg., 3,150 ft.
Hoffer Oil Corp.'s No. 1 Nelson	Spudded and S.D.

(Continued on Page 98)

West Texas Proration Now Complete

To Prevent Drilling Campaign in New Section 9 Miles North of Hendricks Field. Record Well in Yates Pool, Pecos County

James H. Dameron
Fort Worth Bureau, The Oil and Gas Journal

FORT WORTH, Tex., May 14.—Foremost among the noteworthy developments of West Texas is the making proration 100 per cent in Hendricks, big flush production discovered 9 miles north of the pool, and the completion of the record well in West Texas. Of those, the wildcat discovery easily held the center of interest.

Another article in this issue deals more in detail with the Gibson & Johnson and Kesslar & Logan No. 1 Daugherty, Section 3, Block 74, which is estimated to be good for anywhere between 5,000 bbls. and 10,000 bbls. daily. The well blew 45 minutes before being closed in and is estimated to have been making 60,000,000 feet of gas.

It had been planned to open the well today, but opening it for a test has been delayed for two or three more days. Rumore were afloat that J. M. Kesslar and Dave Logan, Okmulgee, Okla., operators, had sold their half interest in the wildcat to other interests in Okmulgee. Little credence is placed in the rumor. The latter were in Abeline Monday with Gibson and Johnson and no mention of the report was made there.

No. 1 Daugherty comes under the Winkler County proration order and will be allowed to produce its pro rata share along with other wells in the Hendricks Pool. H. N. Pardee, umpire for Winkler County, will make a test of the well some time during the current week for proration figuring.

Whether or not the owners have made arrangements for a pipe-line connection could not be learned. No lines extend that far north.

Operators as a whole are making a strong effort to prevent a drilling campaign breaking loose in the new sector, and the general feeling is that a plan will be agreed to that will prevent rapid development. Regardless of the drilling in that area, Winkler County production will be held down to around 150,000 bbls. for the next week.

As a result of the proration, Winkler slid down to an average of 153,026 bbls. for the past production estimate period. Its loss was reflected in the general West Texas production, which was off 100,000 bbls. to 305,435 bbls. It is probable that production for West Texas will show slight decreases under 300,000 bbls. for the next several weeks.

Winkler County will not go over 150,000 bbls., while Crane, Reagan and Upton Counties are expected to continue to show their gradual decline. Pecos will remain around its average unless something unforeseen happens to the proration plan for that field, and Howard County is not expected to get out of bounds.

Yates Proration Meeting

Yates Pool operators will hold a meeting in Fort Worth at the same time Winkler County operators will be in session next Friday. They will discuss plans for bringing Yates under a proration plan similar to the Winkler County plan.

Umpire Pardee and his staff will start gauging a number of wells in Hendricks May 15 for the purpose of figuring the new proration percentages for the latter half of this month. Some of the work has already been started.

Hendricks proration was made 100 per cent complete last week when Republic Production Co. agreed to the plan. Officials of that company were in doubt concerning the legality of the order and until given satisfactory assurance from state authorities they did not agree to the plan. Open flow tests of the company's four well will be made for the next 15-day period. This basis will be used for computing the allowable runs from the start of proration. The oil already run above proration allowed runs will be deducted from the production until the difference is adjusted.

Hendricks Extension Completed

Hendricks figured heavily during the last seven-day period in new production, and the southeastern extension was completed making 395 bbls. daily. That well is Independent Oil & Gas Co.'s No. 1 Cowden, Section 36, Block B-5. It is approximately 1 mile east of production.

The next well that is expected to extend production is Murchison & Cranfill Brothers' No. 1 Hendricks-H, in the north part of Section 33, Block 26. A core taken at 2,720-25 feet showed tight lime showing a little oil. As a result of an accident a split joint of casing had to be cemented and the well was not drilled in late last week as scheduled.

A summary of operations in Winkler showed a total of 154 operations including locations. Of that number, 95 wells were drilling, wells shut down totaled 19, rigs and derricks 28, and locations 12.

The 1,000,000-bbl. concrete storage tank of the Roxana Petroleum Corp. at Pyote, Texas. The company is filling this tank with Winkler County crude. The Roxana Petroleum Corp. is constructing another such tank near McCamey, Texas.

Twenty wells were completed with a combined production of 80,508 bbls., or an average flush production of 4,025 bbls. per well.

New Well Record

A new well record for West Texas was established in Pecos County when California Co.'s No. 15 I. G. Yates, Lease 1, in Section 34, Block 194, figured out to be a 90,702-bbl. well. The well topped the pay at 1,109 feet and was drilled to a total depth of 1,125 feet. It started off flowing 360 bbls. per hour when the pay was topped and the big increase came at the total depth. During the 50 minutes it was allowed to produce wide open, it gushed oil at the remarkable rate of 63 bbls. per minute and put 3,150 bbls. in the tank at the end of 50 minutes. On that basis it was figured that the well could produce 90,000 bbls. daily.

This record totally eclipses the record of the Mid-Kansas Oil & Gas Co. and Transcontinental Oil Co.'s No. 2-C Yates in the eastern part of Section 60. No. 15 Yates is approximately 2¼ miles northwest of No. 2-C. California Co.'s No. 16 on the same lease flowed 1,322 bbls. per hour at 1,230 to 1,367 feet.

Reagan County reported a couple of failures in the south part of the county this week. Skelly Oil Co. and Utah-Southern Oil Co.'s No. 2 University, Section 35, Block 8, condemned territory northwest of the Skelly-Utah-Southern Producer in Section 33, when No. 2 went into sulphur water at 3,150-58 feet. The well had a small show of oil at 3,139 feet; it topped the lime at 3,100 feet and has an elevation of 2,922 feet. California Co.'s No. 4 University, NW cor. of Section 3, Block 7, offsetting the Skelly-Utah producer, is more disappointing. The well was shut down for four hours and bailed a half bailer of oil and 6 gallons of sulphur water from 3,093-98 feet. It is now shut down for orders.

Andrews County

Interest in Andrews County was more or less overshadowed by the developments in northern Winkler. Deep Rock Oil Co.'s No. 1 Harris in the center of the SE of Section 12, Block A-46, which struck a flow of gas at 2,940 feet, blowing the tools up in the hole and causing a fishing job, is ready to resume drilling. The gas flow is estimated to be a little more than 1,000,000 feet daily.

Production figures for April show that West Texas produced 11,200,000 bbls. of crude, which represents an increase of 667,000 bbls. over March and an increase of 2,335,000 bbls. over January. Hendricks, in Winkler County, produced more than half of the April production, with a total of 6,612,000 bbls. Church and Fields, in Crane County, was second with a production of 1,385,000 bbls.; and Yates, in Pecos County, was third with 1,292,000 bbls.

Pipe-line production figures show a total of 39,677,000 bbls. produced during the first four months of 1928.

WEST TEXAS COMPLETIONS
Week Ended May 12

Kent County

Marland & Texon's No. 1 Bilby, located in Section 49, Block K, Thompson Survey, 1,320 feet from the south and west lines topped the salt at 610 feet, lime at 2,160 feet and was dry and abandoned at 3,580 feet.

Mitchell County

Magnolia Petroleum Co.'s No. 5 Mary Foster, located in Section 17, Block 29, T.&P.R.R. Co. Survey, topped the lime at 1,738 feet and was dry and abandoned at 3,150 feet. California Co.'s No. 8 C. M. Adams Lease No. 2, located center of south line NE NW of Section 11, Block 28, Township 1, T.&P.R.R. Survey, topped the pay at 2,958-70 and swabbed 20 bbls. before it was shot with 300 quarts at 2,955-3,075 feet after which it made 80 bbls. and was completed at a total depth of 3,085 feet.

Pecos County

Location was abandoned for Marland Oil Co.'s No. 13-A Yates. California Co.'s No. 1 Mrs. M. A. Smith Lease No. 2, located in Section 26, Block 194, G.C.&S.F. R.R. Survey, was temporarily abandoned at 1,595 feet. California's No. 15 Yates

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WILDCAT OPERATIONS IN WEST TEXAS

Week ended May 12, 1928

Company, farm and location—	Remarks—
ANDREWS COUNTY	
Deep Rock Oil Co.'s No. 1 J. W. Harris, C SE Sec. 12, Blk. A-46, Public School Land, elev. 3,167 ft.	Top salt 1,690 ft.; fishing pipe and tools; total depth 2,946 ft.; 1,000,000 ft. gas.
BORDEN COUNTY	
Dixon Creek Oil Co.'s No. 1 Clayton & Johnson	Top salt 1,250 ft.; top lime 2,945 ft.; total depth 3,550 ft.; 1½ bbls. per hr. sulphur water 3,505-45 ft.
Marland Oil Co.'s No. 1 G. E. McDavid, C SW Sec. 156, Blk. 26, H.&T.C. Sur., elev. 2,310 ft.	Top salt 1,250 ft.; top lime 2,410 ft.; total depth 3,515 ft.; dry; to plug.
Marland Oil Co.'s No. 1 Alexander Murphy, C SW Sec. 66, Blk. 25, H.&T.C. Sur. (3,250-ft. test)	Location.
BREWSTER COUNTY	
Cowden & Bowser's No. 1-A Jackson & Harmon, Sec. 1, Blk. 331, T.C.R.R. Sur.	Drlg. 171 ft.
Forrest Oil Co.'s No. 1 Skinner, C SW SE Sec. 100, Blk. 2, G.C.&S.F.	Shut down 276 ft.
J. M. Hickey's No. 1 Jackson & Harmon, NE cor. Sec. 182, Blk. 9, G.H.&S.A. Sur.	Shut down 1,079 ft.
Reese & White's No. 1 Kimbale, C NE Sec. 204, Blk. 9, G.H.S.A. Sur.	Shut down 1,800 ft.
Van McPhail's No. 1 McIntyre, SE cor. Sec. 59, Blk. 352, 7 mi. S of Alpine	Shut down 1,700 ft.
Wilcox & Anderson's No. 1 Gage, Sec. 8, Blk. 300, T.C. R.R. Sur.	Shut down 2,100 ft.
COKE COUNTY	
Lipan Oil Co.'s No. 1 S. M. Conner, Sec. 71, Blk. 2, H.& T.C. Sur.	Show oil 1,224-34 ft.; shut down 3,375 ft.
Lipan Oil Co.'s No. 1 E. C. Rawlings, Sec. 390, Blk. 1-A, H.&T.C., elev. 2,750 ft.	Shut down 2,739 ft.
CONCHO COUNTY	
Douglas Oil Co.'s No. 1 A. Harrell, in John Moon Sur., No. 27	Drlg. 240 ft.
The Exploration Co.'s No. 1 Hartgrove, Blk. 240, J. Schouch Sur., elev. 1,718 ft.	Shut down 940 ft.; may junk hole.
Sartain Oil Co.'s No. 1 Evridge	Spudded and shut down.
CRANE COUNTY	
C. C. Duffey et al's No. 1 Cowden, Sec. 18, Blk. X, C.C.S.D.R.G.&N.G. Sur.	Rig.
Gulf Prod. Co.'s No. 4 W. N. Waddell, C of SW SW Sec. 3, Blk. B-25	Drlg. 50 ft.
Gulf Prod. Co.'s No. 50 J. T. McElroy, Sec. 200, Blk. F, C.C.S.D.&R.G.N.G.R.R. Sur.	Drlg. 1,830 ft.
Gulf Prod. Co.'s No. 51 J. T. McElroy, 1,442 ft. S, 1,650 ft. W NE cor. of lease, out of Sec. 201, Blk. F, C.C.S.D.&R.G.N.G.R.R. Sur.	Drlg. 145 ft.
Humble O. & R. Co.'s No. 1 University-C, 330 ft. each way from SE cor. Sec. 40, Blk. 30, Univ. Land	Shut down 300 ft.
J. K. Hughes Dev. Co.'s No. 1 State Bank Commission, 2,310 ft. from NW line and 990 ft. from NE line Sec. 23, Blk. 4, H.&T.C.R.R.	Location.

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(DUNN TOOLAGRAM)

The DUNN Super-Safety TUBING STOP

Insures and will INCREASE Your Production!

A STRING of tubing without a Dunn Super-Safety Tubing Stop makes any producing well a gamble.

Can you afford to face this hazard when positive protection costs so little?

The Dunn Super-Safety Tubing Stop not only catches the tubing should it part or come unscrewed —but it positively stops it as well.

The outstanding difference between this and other appliances designed for similar purposes is its positive action and safe dependability, and the fact that it *may be run in the hole as fast as desired without setting, thereby reducing off-production time to a minimum.*

Our Unqualified Guarantee

To prove to you that the Dunn Super-Safety Tubing Stop is all we claim for it—we will ship any size, transportation prepaid, for trial under your own conditions of service. If not satisfactory for any reason, return at our expense for full credit.

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DUNN SAFETY *means* DONE SAFELY

Earlsboro Pool Extended Half Mile

Skelly and Atlantic Joint Test on East Side Is Good Well. Allen Pool Output Is Up. Logan's Total Production

By J. L. Dwyer
Staff Correspondent, Oklahoma Fields

With a scattered interest in the fields, the difficulty of reviewing last week's activities is trying to find out where to start. The Greater Seminole area has occupied the spotlight for such a long time that those interested in Oklahoma have long since tired of the word. There are several other regions which have promise at this time, but none sufficiently strong to rob Seminole of its premier position, although the Allen Field of Seminole-Hughes-Pontotoc Counties has now attained a daily average of 20,292 bbls., and with it has attracted additional interest from those operators and companies who have steadily felt that drilling 4,200-foot holes was too trying a task on their bank accounts during the current price of oil.

The Greater Seminole area had another varied week, going up with the completion of several important wells, and dropping off with the shutting-in of the wells in the restricted district south of the Little River Pool in Township 7-6. The daily output of the pools ranged last week from 274,500 bbls. for the low, to 278,694 bbls. for the high. The addition of several wells in the inside locations also helped the variation in output. The production on Saturday by pools was as follows:

	Bbls.
Little River	44,446
Bowlegs	68,150
Earlsboro	94,944
Semanole	53,122
Searight	14,410
Total	275,072

A complete check of the wells as of May 8 shows the following method of production for the entire field:

Manner—	Number	Prod. (bbls.)
Wells on air	433	188,753
Wells flowing	65	28,700
Wells pumping	457	47,504
Wells swabbing	67	17,032
Wells off production	66	0
Total	1,088	281,988

On that date there were 372 wells making water in the five pools of the Greater Seminole area.

Outstanding Completion

Probably the most outstanding completion of the week was the Skelly Oil Co. and Atlantic Oil Producing Co.'s No. 1 Cherry, SW cor. NW SW Section 6-9-6, a half mile east of the present limits of the Earlsboro Pool. This well was reported running high last week, and was considered having favorable chances of producing as it had no water in the upper sands. The well found the Wilcox sand 4,410-4,423 feet, and began flowing 60 bbls. hourly. It extends the pool a half mile, and is probably another spot which will prove similar to the regional highs of the east side of Earlsboro.

Greater Seminole Movement

The movement of oil out of the Greater Seminole area shows small change for the past few weeks. The daily average pipeline movement of oil by companies for the week ending May 12 is given below:

	Bbls.
Barnsdall	8,247
Champlin	287
Consolidated	742
Mid-Cont. Pet. Corp.	5,237
Empire	8,865
Gulf	26,873
Magnolia	39,633
Oklahoma	41,537
Ozark	13,620
Prairie	50,311
Pure	2,248
Shaffer	3,117
Sinclair	31,534
Texas	16,198
Tidal	5,482
White Oak	1,674
Total	255,802

The present tank-car shipments out of the field approximate 11,726 bbls. daily. The differences between these two figures and the daily production represents the amount of oil which is being placed in storage by the producers in the field.

The only important completion of last week in the restricted district south of the Little River Pool proper was the Carter Oil Co.'s No. 1 Wilson, SW cor. SW Section 12-7-6, which is a direct offset to the Snowden & McSweeney well in the NW cor. NW Section 13-7-6. The Wilson well had the Wilcox sand 4,206-11 feet, and flowed 3,925 bbls the first 24 hours. After three days open flow during which it held this figure, the well was pinched in to 100 bbls. daily in accordance with the Seminole operators' agreement.

Wilcox Sand Sensitive

The greatest possible illustration of the delicate nature of the Wilcox sand production in the Greater Seminole area, and its extreme sensitiveness to drainage by adjacent wells may best be viewed by a consideration of the performance of two wells in the restricted district of 7-6. The Gypsy Oil Co.'s No. 1 Denmark, NW cor. SW SE Section 11-7-6, was a 3,800-bbl. per day well during its period of three days natural flow. At the expiration of this time it was pinched in. The Mid-Continent Petroleum Corp.'s No. 1 Bruner, a diagonal offset to the Snowden & McSweeney well, is a half mile southeast of the Denmark well, but when the Bruner well was drilled into the Wilcox sand with its resultant big production, the Denmark well went entirely dead. After the Bruner well had been permitted to flow for three days it was pinched in, and immediately after that the Gypsy's Denmark well came back to life; although its output is still restricted This would seem to illustrate the drainage which may be anticipated in this region.

Snowden & McSweeney's No. 1 Tiger, NW cor. NW Section 13-7-6, one of the two wells which started the activity in 7-6, has also gone dead when it was shut in, and the well was showing a little water. The owners of this well have apparently made no efforts at revival up to the present.

Test Wells Started

Under the agreement of March 1, there were 10 test wells started under the plan of operation devised by R B. Pringle, vice president of the Independent Oil & Gas Co., and also three offsets to the well of the Independent Oil & Gas Co. and the Snowden & McSweeney well. This made a total of 16 wells which were started to test out the possibilities of the region, and also to guard against drainage by the two producing wells which had been found. At this time, 11 of these wells have been completed, and are pinched in. The remaining 5 wells should be drilled in within 10 days. The 11 wells which have been drilled have afforded an ample idea of subsurface conditions in this region, and two of them have been entirely dry and are being plugged, the Prairie Oil & Gas Co.'s No. 1 Hudson, SW cor. SE SE Section 12-7-6, and the Carter Oil Co.'s No. 1 Fish, NW cor. SW Section 12-7-6. These wells are on a line running northwest and southeast on the northeast part of the restricted area. When their location is considered, it would seem that the best results are to be expected from the central part of the township where about 3,000 acres now seems destined to be highly productive. T. B. Slick's No. 1 Williams, NE cor. SE NE Section 15-7-6, is the most observed well at this time, and it is reported running low although this seems to have little meaning until the Viola lime is touched The Slick well is the farthest west well in the restricted area, and should it become productive, the limits of the area will necessarily have to be changed for drainage reasons. This will very likely be done if the Slick well establishes the presence of production.

Wildcat Tests

A wildcat well south of the Maud region has failed to find anything in paying quantities, and has temporarily placed a damper upon this area. It is the Indian Terrtory Illuminating Oil Co.'s No. 1 White, NW cor. SE Section 21-7-5, which had Wilcox sand 4,162-66 feet with a hole full of water. So much for the Greater Seminole and tributary regions.

Oklahoma City seems destined to have another wildcat well drilled close to its border for the Indian Territory Illuminating Oil Co. is reported considering the drilling of a test well on a block of leases which it holds in township 11-3.

Burbank District

The Burbank district of Osage County offers some news. The Kewanee Oil & Gas Co.'s No. 1, NW cor. SW Section 21-27-6, had sandy shale 2,887-94 feet and is rather a disappointment having only 1,000 feet of oil in the hole after a shot of 100 quarts. No. 2, NE cor. NW SW Section 21-27-6, is making 10 bbls. per hour natural from sand 2,884-95 feet. These wells are both on the lease which was purchased at the last public sale of Osage leases for a price of $665,000.

In the same district the Phillips Petroleum Co 's No. 1 SW cor. SE Section 21-27-6 is good for 25 bbls. an hour natural from sand 2,903-80 feet.

In the Henryetta district of Okfuskee County, the Minnehoma Oil Co. was treated to the experience of flash in the pan when it had a good well which went to water rapidly. It was No. 3 Holmes, CNL NE NW Section 30-11-11, which had Wilcox sand 3,588-3,602 feet, and started flowing 50 bbls. an hour. After six hours' flow at this rate, the well

WILDCAT OPERATIONS IN OKLAHOMA

NORTHERN OKLAHOMA

GRANT COUNTY

Otstot Development Co.'s No. 1 Snyder, NE cor. NE Sec. 6-28-3w ..... Shut down 4,518 ft.
J. V. Bailey and others' No. 1 Maddox, C SE Sec 18-27-5w ..... Estimated 2,000,000 gas, spray oil 1,835-42 ft.; cleaning out.
Brasil & Moses' No. 1 Goutier, SW Cor NW Sec 34-26-4w ..... Shut down for pipe 650 ft.
Lambert and others' No. 1 Tabor, SE cor. NE SE Sec. 23-26-3w ..... Abandoned after spudding.
Cowden and others' No. 2 Vollmer, C 1 NE SW Sec. 22-25-4w ..... Fishing 5,640 ft.

HARPER COUNTY

Kopisch Oil Co.'s No. 1 Johnson, NE cor. SE Sec. 24-27-21w ..... Rig abandoned.
Hoffer Oil's No. 1 Cooper, NW cor. SE SE Sec. 12-25-22w ..... Shut down 1,130 ft.

WOODS COUNTY

Victor Oil Co.'s No 1 Buskirk, SW Cor. SE Sec. 10-26-15w ..... Test abandoned.
McCray Oil & Gas Co.'s No 1 Whitney, NE cor. NW SE Sec. 19-24-14w ..... Dry and abandoned 1,880 ft.

KAY COUNTY

Boucher and Others' No 1 Cooper, SE cor. SE Sec. 25-27-2w ..... Casing 3,150 ft.
Ponca Lee Oil's No. 1 McNeil, NW cor. NE Sec. 32-26-2e ..... Shut down 2,795 ft.
Geo. L. Miller and others' No. 1 Home, NW cor. SE Sec. 11-24-3 ..... Rig.
Tonkawa Development Co.'s No. 1 McDaniels, SE cor. SE Sec. 15-25-1w ..... Fishing 4,638 ft.
Corley and others' No 1 Williams, SE cor. NE SW Sec 7-21-1w ..... Abandoned 1,930 ft.

WOODWARD COUNTY

Otstot Development Co.'s No. 1 Simmons, SE cor. SE Sec 32-24-17w ..... Shut down for pipe 1,430 ft.
Wright & Wahl's No. 1 Williams, C NW Sec 16-23-20w ..... Rig.
Randau & Mooney's No 1 Parker, SE cor. NE NW SEC. 4-23-16w ..... Cleaning out 1,132 ft.
Sharon Oil Co.'s No. 1 Elmore, SW cor. SW Sec. 25 21-21w ..... Rigging standard tools 3,100 ft.
Burgoyne Brothers' No. 1 Barnes, SW cor SE NE Sec. 15-21-19w ..... Shut down 870 ft.
Wright & Wahl's No. 1 James, C. NW Sec 16-23-20w ..... Rig.

GARFIELD COUNTY

E. L. Love and others' No. 1 White, SE cor. NW Sec 9-24-6w ..... Hole full of water 4,650 ft., shut down 4,720 ft.
Falling et al's No. 1 Gorusch, SE cor. SE Sec. 14-24-3w ..... Swedging pipe 4,767 ft.
Fleming and others' No. 1 Wengert, NW cor. NW Sec. 3-22-5w ..... Test abandoned.
Beopple and others' No. 1 Cehweer, C SW NE Sec 12-21-4w ..... Test abandoned.
Marland and Barnsdall's No. 1 Looman, NE SE Sec 9-20-4w ..... Shut down 5,740 ft.
Marland Oil Co.'s No. 1 Miller, SW cor. SW Sec 12-20-4w ..... Shut down at 4,586 ft., waiting on test Sec. 9-20-4w.
Champlin Ref. Co.'s No. 1 Storm, NW cor. SE Sec. 24-24-3w ..... Drilling 3,710 ft.

ELLIS COUNTY

Oklahoma Northern's No. 1 Younk, NW cor. NW Sec 9-21-25w ..... Shut down 300 ft.
Hoffman and others' No. 1 Ottes, NW cor. NE Sec. 20-15-3w ..... Rig blown down.

NOBLE COUNTY

Barnsdayy Oil Co.'s No. 1 Bumberger, NE cor. NW SE Sec 11-21-1 ..... Location abandoned.
Marland Oil Co's No. 1 Kidd, NW cor. SW Sec 32-20-1w ..... Rigging standard tools 4,084 ft.

KINGFISHER COUNTY

Slick & Harrington's No. 1 Cromer, SE cor. NE NE Sec 25-18-5w ..... Location.
H. H. Morgan's No. 1Buscon, SW cor. SE NE Sec. 30-16-9w ..... Test abandoned 1,610 ft.
Galt-Brown Oil Co.'s No. 1 Wolff, NW SE Sec. 6-16-7w .. Drilling 4,300 ft.
McKinney & Crawford's No. 1 Sturgeon, NE cor. SW Sec. 27-16-6w ..... Drilling 4,410 ft.
Wiley & Manahan's No. 1 Johnson, C NW Sec. 26-16-5w .. Shut down 4,512 ft.

LOGAN COUNTY

Champlin Refining Co.'s No. 1 Clark, SE cor. SW Sec. 3-19-4w ..... Rigging rotary 5,822 ft.
Sinclair Oil & Gas Co.'s No. 1 Webber, SE cor. SE Sec. 18-19-4w ..... Drilling past pipe 4,500 ft., total depth 4,808 ft.
Haley & Smith's No. 1 Guier, SE cor. SW Sec. 33-18-3w .. Underreaming casing 3,825 ft.
Garber & Pulse's No. 1 Widdoes, NE cor. SE NW Sec. 32-18-2w ..... Shut down 1,200 ft.

(Continued on Page 91)

To be caught unprepared for a "rainy day" is careless but pardonable Not to be ready for "fair weather" in business is inexcusable and perhaps financially fatal

Fair business weather for the oil industry is around the corner

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went to water, and the hole filled with water, completely drowning out the oil.

Lovell Area

The Lovell area of Logan County shows no change from last week. The field has produced almost 1,000,000 bbls. of oil as it approaches its first birthday, May 17. The production is all from the Wilcox sand found at approximately 6,100 feet. The Roxana Petroleum Corp. has had all the production in this pool, and the aggregate output of all the wells from discovery until May 12 is given below:

Roxana Petroleum Corp.—	
No. 1 McCully*	706,116
No. 1 Freelove	180,097
No. 1 McDaniel	4,881
No. 1 Ross	63,671
No. 1 Stevens	1,613
No. 1 Williams	26,326
Total	982,604

*Discovery well.

Allen Field

The Allen Field of Pontotoc-Hughes-Seminole Counties is growing in importance. There are now 42 drilling wells in this pool, 32 north of the river, and 10 south of the river.

The Mid-Continent Petroleum Corp. now has a lease which leads the field. It is the Fleet lease, and No. 4 Fleet, NE cor. SE SE, Section 7-5-8, is flowing 80 bbls. an hour; No. 5, SW cor. SE SE, Section 7-5-8, is making 760 bbls. daily; No. 10, SE cor. SW SE, Section 7-5-8, is making 800 bbls. daily; and No. 11, SW cor. SE, is making 550 bbls. daily.

The daily average production by companies and leases of the Allen Field for the week ending May 12 is given below:

	Bbls.
Louisiana Oil Ref. Co.:	
Reed	755
Perry	453
McElroy	593
Harjo	561
Warfle	313
Punluste	1,442
Total	3,913
Homa-Okla Oil Co.:	
Adams	110
McCall	909
Milner	150
Milner-B	557
Wheeler	13
Total	1,739
W. R. Ramsey:	
Webb	452
Harjo	448
Parker	152
Milner	146
Butler	12
Warfle	21
M. Butler	65
McElroy	59
Smith	30
Total	1,385
Westheimer & Daube:	
Milner	513
Wade	241
Total	754
C. B. Shaffer:	
Yoakum	793
Chapman	111
Total	904
Sun Ray Oil Co.:	
Cully	1,846
Mid-Continent Pet. Corp.:	
Fleet	7,395
Indian Terr. Ill. Oil Co.:	
Bingham	264
The Texas Company:	
Hyde	770
T. B. Slick:	
Harris	30
Gilcrease Oil Co.:	
Reed	430
Anderson & Prichard:	
Cully	588
Total (from 90 wells)	20,292

Creek County

Roxana Petroleum Corp. has the rig up for No. 6 Sewell, SE cor. NW NE, Section 18-19-9. Savoy Oil Co. has built the rig for No. 1 Bruner, NW cor. NE, Section 25-19-9. C. G. Tibbens moved a machine to the location for No. 4 Jackson, NE cor. SW, Section 4-18-12. Chief Drilling Co. made location for No. 2 Fulsom, NW cor. SE, Section 16-17-10. McCulloch Oil Co. and others made location for No. 1 Vencl, SE cor. NE, Section 31-14-9. Shaffer Oil & Refining Co. has the rig on the ground for No. 1 Jones, SW cor. NE, Section 26-18-7. J. H. Markham, Jr., made location for No. 7 Beesley, NW cor. SW NW, Section 20-17-7, Drumright Pool. The Prairie Oil & Gas Co. is building the rig to deepen No. 2 Coachman, SW cor. NW NW, Section 20-17-7.

H. J. Haubert and others' No. 3 Bruner, SE cor. SW NW SW, Section 24-18-11, gauged 1,500,000 feet of gas from Red Fork sand at 1,750-86 feet. C. G. Tibbens' No. 3 Jackson, NE cor. SW, Section 4-18-12, is making 2,000,000 feet of gas from Red Fork sand at 1,729-44 feet. Skelly Oil Co. and others' No. 1 Dickson, NW cor. SW, Section 19-17-10, is dry and abandoned at 3,111 feet. Empire Oil & Refining Co. and others' No. 1 Micco, SE cor. NW NW, Section 18-14-10, has been completed for 37 bbls. in Dutcher sand at 2,849-50 feet. Riverland Oil Co.'s No. 1-A Friday, SW cor. SE SE, Section 31-15-9, made 157 bbls. from Dutcher sand at 3,112-22 feet. Bu-Vi-Bar Petroleum Co.'s No. 3-A B. Cain, SE cor. Section 18-17-7, Drumright Pool, is dry and abandoned at 2,842 feet. Lima Oil & Gas Co.'s No. 1 Henehochee, NE cor. SE SE, Section 35-15-7, has been abandoned at 2,635 feet.

Kay County

Burnham & McGraw's No. 1 Swenson, NE cor. NW SE, Section 29-29-1, is spudding. Blackwell Oil & Gas Co. made location for No. 1 Janke, C SE SW, Section 11-28-1w, to drill for shallow gas. John Goins and others made location for No. 1 Hack, NW cor. SW, Section 24-28-1w, for a shallow gas well. Rogers and others' No. 2 Ellidge, a shallow gas test, C SE NE, Section 32-27-1w, is drilling at 150 feet. Martin and others' No. 2 Quade, SE cor. NE SW, Section 4-27-1, is drilling at 525 feet for shallow gas.

McDorman and others' No. 1 Campbell, SE cor. SW, Section 32-29-1w, has been abandoned at 950 feet. Carter Oil Co. and Ona Oil Co.'s No. 1 Johnson, C SE NE, Section 18-29-1, was completed for 6,105,000 feet of gas in sand at 1,456-76 feet. Industrial Oil & Gas Co.'s No. 1 Wright, C SW SW, Section 1-27-1w, missed the gas sand and was abandoned at 860 feet. Anolu Oil Co.'s No. 2 Barr, C NE NW, Section 16-27-1w, was not deepened from 3,440 feet as intended, and the gas turned back into the line. Martin and others' No. 1 House, NE cor. SW, Section 32-27-1w, is dry and abandoned at 835 feet.

Lincoln County

Flynn & Morgan's No. 1 Smith, SE cor. NE NW, Section 27-17-5, is dry and abandoned at 4,082 feet.

Noble County

John White and others' No. 1 Cooper, C NW SW, Section 5-24-1w, is dry and abandoned at 2,187 feet.

Osage County

R. L. Berlin moved a machine out for No. 12, NE cor. NW NW, Section 24-29-10. Phillips Petroleum Co. made location for No. 1, SW cor. Section 1-27-5, Burbank Pool. Location was also made for No. 4, SE cor. Section 1-27-5. No. 6 is a location, NE cor. SW SE, Section 1-27-5. The rig is up for a deep test in No. 17, SW cor. NE NE SE, Section 11-27-5. Indian Territory Illuminating Oil Co. made location for No. 392, NE cor. Section 29-25-8. Marland Oil Co.'s No. 10, NW cor. NE SE NE, Section 16-24-8, is drilling at 300 feet. Osage Gas Producers Co. moved a machine to the location for No. 388, NW cor. SW NE, Section 32-24-12. J. S. Potts and J. W. Fields made location for No. 3, SW cor. NE NW, Section 30-23-12. Oklahoma Natural Gas Corp. made location for No. 784, SW cor. NW SW, Section 11-21-10.

Kewanee Oil & Gas Co.'s No. 9, SE cor. SW, Section 21-27-6, has been completed for 71 bbls. in Burbank sand at 2,915-93 feet. Peters Petroleum Co.'s No. 4, SE cor. NW SW, Section 26-25-8, is producing 25 bbls. from Burgess sand at 2,157-2,220 feet. Osage Gas Producers Co.'s No 387, SE cor. SW NW NE, Section 32-24-12, was completed for 750,000 feet of gas in sand at 992-98 feet. Commercial Drilling Co.'s No. 4, NE cor. SW SW, Section 22-21-12, made 80 bbls. from Bartlesville sand at 1,241-89 feet. The Prairie Oil & Gas Co.'s No. 6, SW cor. NE SW NW, Section 21-27-6, made 520 bbls. from sand at 2,915-45 feet.

Pawnee County

Empire Oil & Refining Co. is moving the rig in for No. 1 Tucker, SW cor. NE SW, Section 10-22-3, for a deep test. R. E. Freeman and others' No. 1 Adams, C NW NE, Section 17-21-7, is dry and abandoned at 2,600 feet. Peter Adamson, Jr.'s, No. 1-A, SE cor. NW, Section 25-21-8, made 20 bbls. from sands at 841-50 and 1,070-1,124 feet. Garber & Pulse's No. 1 Lucas, NW cor. NE, Section 26-21-8, is making 8 bbls. from sand at 1,624-89 feet.

Payne County

Pure Oil Co. made location for No. 1 De Jarnett, SE cor. NE, Section 7-18-4. Empire Oil & Refining Co. made location for No. 1 Minnick, NW cor. NE, Section 3-18-6.

Tulsa County

Sand Springs Home has a machine at the location for No. 1 Jones, SE cor. NW NE, Section 15-19-11. Sac and Fox

(Continued on Page 133)

DRY HOLE IN LOST SPRINGS POOL; MORE WATER IN THE GORHAM AREA

By J. L. Dwyer
Staff Correspondent, Kansas Fields.

A dry hole southwest of the Lost Springs Pool, and the more general appearance of water in the Gorham area of Russell County featured the field operations in Kansas last week. The water intrusion at Gorham will probably be found very useful in the drilling limitation of the advisory conservation committee of the Mid-Continent Oil and Gas Association which is striving to limit the activity of this region in pursuance with its general conservation program in the States of Oklahoma and Kansas.

The dry hole was drilled by Lasson and others, and is No. 1 Houser, NW cor. SE, Section 28-17-4. It had chat 2,423-77 feet with a showing of oil, and a hole full of water and is dry and abandoned.

In the Gorham area, the discovery well, Stearns & Streeter's No. 1 Mermis, SW cor. NW SW, Section 33-13-15w, which has been making 700 bbls. of oil daily for several weeks, started showing some small amount of water last week. This well is now making 2 per cent water, and 3 per cent b.s. Stearns & Streeter's No. 2 Mermis, NW cor. SW, Section 33-13-15w, drilled into the conglomerate pay at 3,306 feet, and from 4 feet in was swabbing 22 bbls. hourly. The well was drilled deeper to a total depth of 3,311½ feet, and the water appeared, although the oil increased to 65 bbls. hourly. At latest reports the well was making 15 per cent water, and the owners were plugging back in an effort to shut it off.

In the same region, Tom C. Johnson's No. 1 Gorham, SW cor. NW, Section 33-13-15w, had conglomerate 3,323-26 feet and started swabbing 55 bbls. daily. This well also was affected by the intrusion of the water, and is making 10 per cent. The owners will swab the well 1,000 feet off bottom to try and observe the effects of this type of operation instead of running the swab clear to the bottom of the hole. Keys Brothers' No. 12 Mermis, NW cor. SW SE, Section 33-13-15w, made 7 bbls. hourly from the Oswalt lime found 3,047-86 feet. This oil will be passed up and the well drilled to the lower level which has been producing in this area.

The water will do much to put the brakes effectively upon the play which this region has been experiencing.

Sumner County Well Opened

The long shut-in well of the Gypsy Oil Co. in Sumner County has been opened. It is the No. 1 Douglas, NE cor. SE NW, Section 23-34-2w, which is producing from a sand thought to be the Wilcox found from 4,499½-4,501 feet. This well was estimated at 600 bbls. when drilled into the pay, and it was opened last week. It made 487 bbls. of oil per day last week. The oil has a gravity of 46.4 degrees A.P.I., and according to reports it tested 45 per cent gasoline and 15 per cent kerosene when analyzed. The well is making about two bailers per day of water.

This well was completely shut in, and was opened up only when trouble was experienced by the owners of adjacent acreage who were unable to renew their leases for favorable prices. It is possible that the failure of the renewal project will cause some drilling activity in this

(Continued on Page 133)

KANSAS WILDCATS

BARBER COUNTY

Barbara Oil Co.'s No. 1 Blunk, C NE NW Sec. 20-34-13w..Drlg. 3,510 ft.
G. W. Basom's No. 1 Grant, SW cor. SE SW, Sec. 13-31-3 ..... Drlg. 789 ft.
Otstot et al's No. 1 Barlow, SE cor. SE Sec. 22-23-3w..S.D., 1,860 ft.
Rolland et als' No. 1 Pickens, NE cor. NW NE, Sec. 27-30-1w ..... Drlg. 3,422 ft.
J. K. D. Shaffer's No. 1 Carter, C SE SE, Sec. 2-33-13w..Fish., 3,980 ft.
J. K. D. Sharrer's No. 1 Boggs, SW cor. NE SW Sec. 19-33-12w ..... Drlg. 5,585 ft.
Skelly Oil Co. et als' No. 1 Winter, C E half Sec. 17 31-12w ..... Underreaming 3,625 ft.

BARTON COUNTY

Everett & Wiley's No. 1 Ward, NW cor. SW, Sec. 12 20-13w ..... S.D., 3,346 ft.
Huffine et als' No. 1 Smith, NE cor. SE NW, Sec. 17-19-11w ..... S.D., 5,130 ft.
McJilton et als' No. 1 Evanston, SE cor. NW, Sec. 34-17-11w ..... Rig.

BUTLER COUNTY

Cress & Frank's No. 1 Bryson, NE cor. NE, Sec. 26-27-5..Dry and abandoned 3,171 ft.
Derby Oil Co.'s No. 1 Bughman, C SW SW, Sec. 21-18-2w..Drilling 500 ft.
Empire G. & F. Co.'s No. 1 Semisch, NW cor. SE NW, Sec. 4-33-7 ..... Dry and abandoned, 2,732 ft.
LaRobb et als' No. 1 Bronsenger, NE cor. SW, Sec. 24-27-2 ..... Rig.
Mid-Kansas O. & G. Co. et als' No. 1 Harsh, NE cor. SW, Sec. 5-24-3 ..... Skidding rig 900 ft.
Joe Liggett's No. 1 Travender, NW cor. SE, Sec. 24-22-6...Drlg., 2,530 ft.
White Eagle O. & R. Co.'s No. 1 Dixon, NE cor. SE SW, Sec. 1-27-6 ..... Hole full wtr., 3,089-3,105 ft.; S.D.
H. F. Wilcox O. & G. Co.'s No. 1 Littell, NE cor. SE NW, Sec. 21-39-4 ..... Collapsed csg., 1,453 ft.; S.D.

CHASE COUNTY

Griener & Fowler's No. 1 Carson, NE cor. NE, Sec. 9-21-7 ..... Drilling 2,210 ft.

CLARK COUNTY

Walker & Warner's No. 1 Mitchell, SW cor. NE, Sec. 16-31-23w ..... Dry and abandoned, 400 ft., corrected measurement.

CLOUD COUNTY

Concordia P. & R. Co.'s No. 1 Murdock, SE cor. SE, Sec. 6-6-4w ..... Fish., 3,590 ft.

COWLEY COUNTY

Allison & Fitzwilliams' No. 1 Shapland, NE cor. NW SE, Sec. 20-30-6 ..... S.D., 790 ft.
Barnsdall Oil Co.'s No. 1 Russell, NE cor. NW SE, Sec. 15-32-4 ..... Underreaming 2,490 ft.
Derby Oil Co.'s No. 1 Seaman, NE cor. SE NE, Sec. 32-20-3 ..... Drlg., 2,802 ft.
John Herron et als' No. 1 Marshall, SW cor. NE, Sec. 26-20-6 ..... S.D., 1,645 ft.
Meridian Gas Co.'s No. 1 Roselle, SW cor. SE Sec. 8-35-1..Drlg., 2,010 ft.
Otstot et als' No. 1 Volker, NW cor. NE, Sec. 9-35-1...Rig.
Harris & Hahn's No. 1 Gamble, C NW NW, Sec. 17-35-2..S.D., 1,400 ft.
E. B. Shawver et als' No. 1 Disser, NW cor. NW, Sec. 10-34-3 ..... Shut down 3,250 ft.
E. B. Shawver's No. 1 Mullett, C NW SE, Sec. 31-34-3...Drilling, 3,005 ft.
Vickers Pet. Co.'s No. 1 Daniels, NE cor. NW, Sec. 3-30-3..Drlg., 1,640 ft.

DICKINSON COUNTY

Franks & Johnson's No. 1 Schlessner, C SW NE, Sec. 13-16-4 ..... Drlg. 1,400 ft.

(Continued on Page 78)

TRANSIT PUMPS

Figure No. 1700 is a very popular type in the smaller refineries.

Fig. No. 1700

Our name TRANSIT, is a guarantee now just as it has always been for the past forty years.

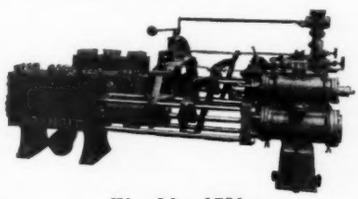


Fig. No. 1791

Real, honest-to-goodness, forged steel cylinders on all types.

Fig. No. 1733

Heavy, cast iron, flanged steam cylinder piping and real brass globe valves.

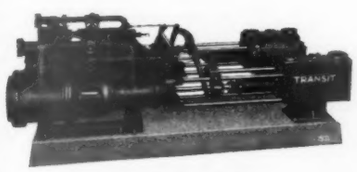


Fig. No. 1571

Oil in exact quantities is delivered per minute, per hour and per day by TRANSIT Hot Oil PUMPS.

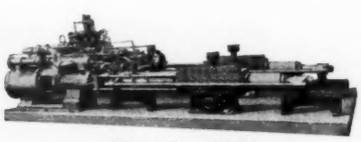


Fig. No. 1805

The discharge from any of these pumps is steady and constant.

Fig. No. 1792

Our hot oil pumps are absolutely safe in operation, both to life and property.

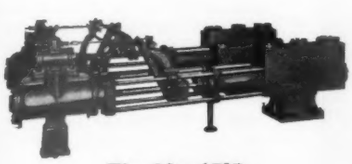


Fig. No. 1725

Illustrated descriptive matter on any type or Fig. No. furnished promptly.

Fig. No. 1731

Long stroke pumps are long lived.

Fig. No. 1680

Representatives

FRICK-REID SUPPLY COMPANY
Tulsa, Okla., or any store.

ASSOCIATED SUPPLY COMPANY
Los Angeles, San Francisco, Bakersfield, Fellows

E. L. WILSON HARDWARE CO.
Beaumont, Texas.

NATIONAL TRANSIT
Pump & Machine Co.
Oil City, Pa.

DISTRICT OFFICES

NEW YORK PHILADELPHIA PITTSBURGH
CLEVELAND HOUSTON TULSA LOS ANGELES

Representatives

THE GLOBE SUPPLY & MACHINERY CO.
New Orleans, La.

F. C. RICHMOND MACHINERY CO.
Salt Lake City, Utah.

MORTON McI. DUKEHART & CO.
Baltimore, Md.

REEVES & SKINNER MACHINERY CO.
St. Louis, Mo.

Largest Deep Producer in California

Operators Trying to Ascertain Total Thickness of Sand in Long Beach and Ventura Avenue Fields. Deviations in Drilling

By L. P. Stockman
Staff Correspondent, California Fields.

LOS ANGELES, Calif., May 12.—Deep drilling in California has become especially conspicuous during the past several months as a result of the intensive and highly competitive conditions existing in the Long Beach Field and the progressive development work under way at Ventura Avenue. Deep-zone production records have been broken with almost clocklike regularity since the first of the current year and, although the latter field has practically had a monopoly on deep production, Long Beach is in temporary possession of the state record for deep commercial production at the present time as a result of the completion of the Richfield Oil Co.'s No. 6 Denni, which came in flowing 1,475 bbls. of 30.1 gravity oil and 1,500,000 feet of wet gas daily from 7,409 feet. This well is the largest deep zone well on production at present but it is almost a foregone conclusion that this depth will be exceeded within a few weeks by other producers at both Long Beach and Ventura Avenue.

The Associated Oil Co.'s No. 100 Lloyd in the latter field, which is at present rotating ahead at 7,568 feet, has already exceeded the depth of No. 6 Denni at Long Beach and it is within the realms of possibility that the Associated may establish a new California record for deep production as No. 100 Lloyd is within 23 feet of the deepest producer, No. 6 Athens of the Miley Oil Co., which was finished several years ago as a commercial producer from 7,591 feet. The object of this progressive deep drilling at Long Beach and Ventura Avenue is to ascertain the total thickness of productive oil sand in each district in order to determine the total possible ultimate recovery.

Deep drilling in California fields requires considerable skill and technical knowledge on the part of operators because of the high pressures encountered and the existence of unusual subsurface conditions. Ventura Avenue is unquestionably the most difficult California field to develop but, notwithstanding this handicap, operators in this area have consistently broken production records from time to time. The 7,000-foot mark was reached in this field around the first of the year when the Associated brought in its No. 1 Dabney Lloyd flowing 425 bbls. per day from 7,032 feet but this depth has been exceeded several times since and a new record is expected to be established when the Associated concludes work on No 100 Lloyd in the eastern part of the field. It is particularly interesting to note that none of the wells on the apex of the structure has drilled entirely through the producing formation up to the present and production may possibly be secured down to the 8,000-foot level.

Peculiar Characteristics

Although deep drilling at Long Beach is less hazardous than similar work at Ventura Avenue the former district has certain peculiar characteristics which have caused operators no little trouble. The chief source of worry is the apparent lack of uniformity in subsurface conditions and the inability of engineers to correlate wells within a stone's throw of one another. This condition has caused operators considerable trouble due to prevailing intensive competitive conditions which preclude normal well spacing or scintific research. I am of the opinion that a large part of the apparent unconformity in subsurface conditions at Long Beach is mythical and due primarily to the deviation of wells from the perpendicular. A straight hole could hardly be expected at Long Beach in view of the mad race under way to participate in deep flush production as the bit will inherently follow the lines of least resistance when under pressure and naturally deviate from the perpendicular. The importance of this deviation is quite obvious to petroleum engineers and subsurface geologists but has apparently received very little consideration from independent producers.

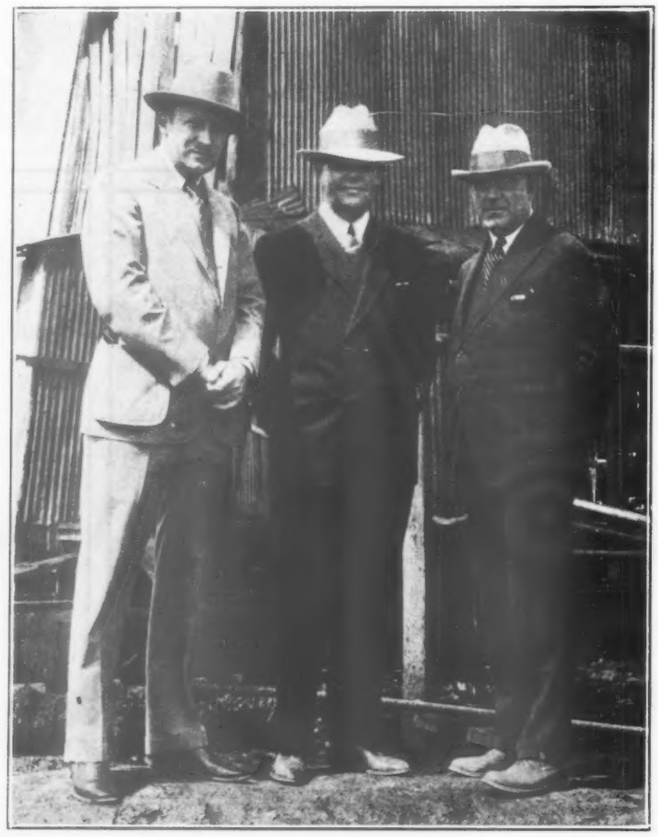
That there is a direct relationship between the apparent unconformity in subsurface conditions at Long Beach and the deviation of wells from the perpendicular is evidenced by the fact that the depth of a crooked hole is not comparable to the depth of a straight hole similarly drilled. In other words, the theoretically perpendicular well will be stratigraphically deeper than one which shows a deviation. Two pencils of similar length illustrate the principle very clearly. If both are projected from the same plane and held vertically the height of each will be equal but if one is tilted the loss in height will be proportional to the angle of deviation. The prevailing irregularities at Long Beach have undoubtedly caused a very appreciable economic loss in the production of recent deep-zone completions as the deviation of wells from the vertical vary and a crooked hole does not represent a vertical depth of 6,500 feet.

Deviations From Vertical

Several recent surveys of deep-zone wells at Long Beach have shown maximum deviations from the vertical in excess of 600 feet with the result that the bottoms of these holes were actually considerably higher than the respective depths indicated. The necessity of making periodical surveys during the course of work, or at least one survey just previous to completion, is quite apparent because allowance must be made for any deviation if a well is expected to be completed at a certain specific projected depth. It is a physical impossibility for operators to correlate well depths at Long Beach due to this condition, and as time goes on the irregularity will become more apparent.

During the early stages of the present deep-zone exploitation at Long Beach the meanderings of deep wells were of no special significance but the appreciable increase in development work during the past several months has resulted in a very complicated situation. A number of drilling wells have been lost in this field as a result of external interference from some other drilling project. Producing wells have also been irreparably damaged when the bit of some drilling project inadvertently penetrated the casing and permitted heavy rotary drilling fluid to mud off the formation and kill the flow. There have been several instances of holes so crooked, and so close together, that the crews have subsequently found they were drilling in the same hole and the passage of drilling mud from one well to another through a porous formation is comparatively common. Within the past few weeks there have been two instances of prolific wells whose production was practically cut off by the ingress of mud from other wells The Shell Oil Co. had to kill No. 28 Alamitos a few days ago because the oil was so mixed with mud from a neighboring well that it practically stopped flowing. A similar instance occurred about 10 days ago when one of E. B. Campbell's wells was killed for the same reason. Both of these projects were producing around 2,000 bbls. per day when killed.

The situation is one which is receiving the serious consideration of oil field technicians, although it is felt that practically the only remedy is more conservative spacing of wells. The tendency of drilling projects to collide or interfere with producing wells increases from day to day as each well started is a potential threat even though it could be held to an absolute perpendicular, as the deflection of previous holes is unknown. A general survey of the entire Long Beach Field, or any other district for that matter, would undoubtedly bring to light a very interesting situation, although it might be difficult to follow the deviation of any specific well in an area as intensely drilled as Long Beach.



W. E. (Steve) Dunlap, assistant manager of production; Clarence M. Fuller, vice president and general manager, and John (Jack) McKeon, manager of production; three executives of the Richfield Oil Co., standing in front of that concern's No. 6 Denni, the largest deep flowing well in the world at the present time at 7,409 feet.

Another 600,000-Bbl.-Daily Year

Although California producers have shut in about 47,000 bbls. of crude oil per day during the past two months, state production closely approximates the output at the beginning of the year and will undoubtedly register a further increase during the next few months as a result of development work in the Long Beach, Ventura Avenue and Rincon Fields. From all indications, 1928 looks like another 600,000-bbl.-per-day year, notwithstanding the recent drastic curtailment and the possibility that this restriction will continue in effect indefinitely. The refining industry in California demands an additional supply of light refining crude to meet further requirements and this insistence will eventually result in higher prices, increased development work in proven areas and a very appreciable enlargement in the scope of present wildcatting and exploration work. The 1928 peak at Long Beach will probably be somewhere in the neighborhood of 200,000 bbls. per day and if the production of this district shows an unexpected rapid decline immediately after the high point has been attained some time during the next 30 or 60 days we may anticipate an immediate resumption of deep exploratory work in other fields.

Santa Fe Springs and Rosecrans are the two most logical fields for deep tests and subsequent work should be watched very closely because if new deep horizons are encountered potential state production may surpass the high reached in September, 1923, when California producers could have produced 1,013,020 bbls. per day with everything wide open if necessity demanded The Santa Fe Springs Field is particularly dangerous because of the numerous town lot holdings which would practically demand immediate work. It is practically a foregone conclusion that several deep tests will be drilled in the Santa Fe Springs and Rosecrans Fields within the next several months, notwithstanding work was suspended on two exploratory holes a few months ago at Santa Fe Springs to prevent possible precipitation of an-

other intensive drilling campaign which would have undoubtedly resulted if a new deep horizon had been encountered. The existence of a new productive horizon below the deep Meyer zone at Santa Fe Springs is merely a matter of conjecture and this field may ben entirely devoid of another zone although there is ample geological evidence to justify the expectation.

Long Beach

One of the most important developments in the Long Beach Field during the week was the completion of No. 6 Denni by the Richfield Oil Co. and although it is the largest deep-zone producer on record at present it only required a total drilling time of 130 days from spud to completion. There are several other deep wells under way at Long Beach and unless something unforeseen develops the Shell's No. 4 Brown will surpass the depth of No. 6 Denni upon completion in the very near future. California Petroleum Corp. also has a deep-zone candidate in No. 2 Ellis, which has just passed the 7,200-foot level. The Shell company has averaged 80 feet of hole per day on No. 4 Brown while the California Petroleum Corp. is running around 75 feet daily. There were several good wells chalked up at Long Beach during the week, the largest, the General Petroleum's No. 5-B Boyer Kelley, which has just come in flowing 3,195 bbls. of exceptionally clean 31.2 gravity oil and approximately 3,000,000 feet of wet gas daily from 6,590 feet. The gas from this well is exceptionally heavily saturated, the gasoline content running better than 4 gallons to each 1,000 feet of gas treated. The General Petroleum Corp has several other immediate potential producers under way, included in which are No. 8 K. & H. and No. 3 Black & Drake, both of which should be in shortly.

The MacMillan Petroleum Products Co. also chalked up a nice completion when No. 5 Jackson came in under a natural flow doing 2,940 bbls. of clean 30.5 gravity oil and 2,600,000 feet of wet gas daily after being redrilled and deepened to the 6,308-foot level. The California Eastern Oil Co.'s No. 1 Capital, which has just come in flowing 1,440 bbls. of clean 30.2 gravity oil and 2,000,000 feet of wet gas daily from 5,495 feet, is probably the forerunner of several completions by this company during the next 30 days. Two other wells are already on the way and approximately five more should be tanking oil within three or four weeks. The A. T. Jergins Syndicate has just completed No. 15 Municipal after redrilling and deepening it to 6,105 feet and this rejuvenated well was returned to production flowing 2,392 bbls. of exceptionally clean 30.1 gravity oil daily. This well, incidentally, is located on property subleased by the Jergins interests from the city of Long Beach several years ago.

New Completions

The Signal Syndicate added a new well to its list of producers early in the week by bringing in No. 7 Featherstone & Preston flowing 1,690 bbls. of clean 30.1 gravity oil daily from 6,066 feet, the hole having been finished with a 4½-inch combination string and cemented through perforations at 5,415 feet. The Shell increased its daily production 1,100 bbls. during the week by bringing in No. 2 Church from the 5,698-foot level and a check indicates the probable completion of several more good wells soon. Graham & Loftus, who have experienced considerable success at Long Beach, listed another satisfactory completion when No. 1 Acme, a new well, made its bid for production early in the week. This well, the fourth finished in the deep zone by Graham & Loftus, started off flowing 1,493 bbls. of unusually clean 29.9 gravity oil from 5,592 feet. The Herndon Petroleum Co. brought in No. 5 Brattee flowing 2,920 bbls. of 30.1 gravity oil and 1,700,000 feet of wet gas daily from a depth of 6,308 feet. The next three or four weeks should witness the completion of an unusually large number of new wells in this field unless something unforeseen retards normal footage. It is rather difficult to predicate the exact completion date of deep wells on account of the numerous factors involved because after the bit leaves the 5,000-foot level it is almost impossible to strike an average daily footage which can be applied to any special group of wells. Several deep-zone completions have been finished in the remarkably short time of 90 days while others run up to as high as eight and nine months.

Seal Beach

There is a very persistent report that the Marland Oil Co. has found another oil sand below the deep Bonner zone in the northern part of the Seal Beach Field offsetting the Alamitos Heights town lot area. No official confirmation is forthcoming from the Marland and the report is still unverified. The well which is reported to have picked up this new sand below the Bonner zone, which extends from 6,000 to 6,600 feet, is No. 12 Selover, which offsets the town lot area north of the Marland's Selover lease. This well, being redrilled and deepened with the 7,000-foot level as its objective, is temporarily held up with a fishing job resulting from a twist off which left several stands of 3-inch pipe in the hole at 6,960 feet. The importance of the sand found by No. 12 Selover lies in the fact that it will probably result in an extensive deepening campaign in the town lot area if large commercial production is subsequently developed. The Bonner zone has not yet received a real satisfactory conclusive test in the town lot area and the potentiality of this horizon, located below the 6,000-foot level, has not been determined. The California Eastern's No. 1 Horowitz, a gas well in the town lot section, which blew in some 10 days ago, is still holding up at the initial rate and no immediate diminution is anticipated as it is beaned down. The Associated has just started the projected 30-day production test on No. 2 Cypress at Potrero which came back flowing 945 bbls. per day after being shut in for about two weeks pending the erection of steel tanks.

Ventura Avenue

Although the Richfield Oil Co.'s No. 6 Denni in the Long Beach Field is the largest deep-zone producer on record at the present time it is generally believed that the Associated will exceed this 7,409-foot hole by bringing in No. 100 Lloyd as a commercial producer in the Ventura Avenue Field from somewhere around the 7,600-foot level. This project is rotating at 7,570 feet with the bit still in the pay at last reports, and it appears almost certain that the Associated will establish a new record for deep production exceeding the completion depth of E. J. Miley's No. 6 Athens which secured production in the Rosecrans Field from the 7,591-foot level. The Associated is within striking distance of this point in No. 100 Lloyd and stands an excellent chance of lifting this record unless mechanical trouble should develop. Several new wells should be finished in the Ventura Avenue Field in two or three weeks as the Associated, Shell and Petroleum Securities are all working on one or more immediate potential producers. The M. K.&T. Oil Co. is concluding preparations to test No. 1 Foster, in the extreme southern part of the field, several hundred feet south of the nearest production on the Orton lease of the Petroleum Securities. No. 1 Foster will be given a chance to produce from the relatively shallow depth of 4,993 feet with about an even chance of securing production although the output will probably be small.

Rincon

Two new wells were completed in the Rincon Field of Ventura County, both standing to the credit of the Pan American company. No. 4 Hobson, the first to come in, registered an initial daily output of 620 bbls. of crude oil and 650,000 feet of gas from the 3,063-foot level. No. 7 Hobson followed a short time later flowing 750 bbls of clean 30.9 gravity oil and 800,000 feet of gas daily from 3,171 feet. Both wells were finished with 6⅝-inch oil strings, the shutoff being made with 10¾-inch so they may be deepened if developments warrant. E. J. Miley has given up all hope of developing commercial production in any of the shallow zones and he is accordingly drilling ahead in No. 1 Hobson at 4,360 feet with the 6,000-foot level as his objective. No. 2 Hobson is rotating slowly, the present depth being 3,120 feet. The Chanslor-Canfield Midway Oil Co. has completed its first producer on Hobson Lease C, No. 1, which registered an initial of 725 bbls. daily from the 3,158-foot level. The oil is relatively clean but it is doubtful if substantial production will be secured as these shallow horizons are not of sufficient thickness. No. 5-C is also in the oil sand and may

(Continued on Page 133)

IMPORTANT SOUTHERN CALIFORNIA WILDCATS

Company, Well, Location—	S-T-R	Depth	Status
World Pet. Co., No. 1 Inglewood, Los Angeles Co.	28- 2-14	3,772	suspended
Mont. Park. Oil Co., No. 1 Browning, Monterey Park	26- 1-12	4,530	set pipe
Shell, No. 2 Mission, San Fernando	4- 2-15	1,431	hd. sd. drilling
Andrews, Otis, No. 1 Lancaster, Los Angeles Co.	23- 8-13	2,120	hd. sd. drilling
Woods, D. H., No. 1 Lancaster, Los Angeles Co.	5- 7-10	Rig	suspended
Security Pet. Co., No. 1 Lynwood, Los Angeles Co.	13- 3-13	5,023	suspended
Dominguez Ext., No. 1 Compton, Los Angeles Co.	27- 3-13	5,510	pipe trouble
San Clemente Oil Co., No. 1 Peck, Hawthorne	20- 3-14	5,765	redrilling
Easton & Smith, No. 1 Calabasas, Los Angeles Co.	19- 1-17	1,460	hd. sd. drilling
Scott & Currier, No. 1 Hawthorne, Los Angeles Co.	33- 3-14	140	suspended
White Behr, No. 1 Watson, Los Angeles Co.	21- 4-14	5,300	land pipe
Buttrum, F. W., No. 1 Richfield, Orange Co.	36- 3- 9	4,552	hd. sd. drilling
Ohio Oil Co., No. 1 Anaheim, Orange Co.	9- 4-11	5,831	hd. sd. drilling
The Texas Company, No. 1 Santa Ana, Orange Co.	34- 4-10	.....	location
Prairie Oil & Gas Co., No. 1 Westminster, Orange Co.	13- 5-11	2,530	hd. sd. drilling
Kneuper, A. D., No. 1 Seal Beach, Orange Co.	10- 5-12	109	sd. drilling
Getty, Geo. F., No. 1 Seal Beach, Orange Co.	14- 5-12	5,535	resume work
Shell, No. 1 Stern, Orange Co.	22- 3-10	5,009	set pipe
Hemet Pet. Co., No. 1 Ward, Riverside Co.	9- 5- 1	2,740	hd. sd. drilling
Mesa Pet., No. 1 Newport, Orange Co.	21- 6-10	2,980	suspended
Davenport O. & G. Co., No. 1 San Marcos, San Diego Co.	30-12- 2	484	hd. sd. drilling
Turner, S. S., No. 1 Escondido, San Diego Co.	25-12- 2	710	hd. sd. drilling

IMPORTANT NORTHERN CALIFORNIA WILDCATS

Bolsa Chica, No. 1 Kettleman, Kings Co.	30-23-19	3,502	suspended
General Pet., No. 2 Ochsner, Kettleman Hills	28-22-18	6,755	suspended
South Coalinga, Well No. 1 Kettleman Hills	35-24-19	3,110	suspended
Monocline Dev. Co., Well No. 1, Kettleman Hills	7-21-21	4,308	suspended
McPhail, Hugh, Well No. 1, Kettleman Hills	13-24-18	2,100	suspended
Milham Explts., No. 1 Kettleman, Kings Co.	2-22-17	7,235	fishing
Star Petroleum, No. 2 Canet, Ventura Co.	13- 3-23	5,945	cemented
Standard, No. 6 Saticoy, Ventura Co.	10- 2-22	975	survey holes
California Western Oil Co., No. 1 Elkins, Ventura Co.	5- 3-19	2,274	hd. sd. drilling
Exline, Emma, No. 1 Saticoy, Ventura Co.	33- 3-21	1,700	sd. sh. drilling
Petroleum Sec., No. 1 Diablo, Ventura Co.	26- 5-18	4,563	testing
Parkford, E. A., No. 1 Strathern, Ventura Co.	5- 2-18	4,002	suspended
Shell, No. 1 Strathern, Ventura Co.	6- 2-18	4,735	cleaning out
American Oil Co., No. 1 Camarillo, Ventura Co.	33- 2-20	176	sd. drilling
Hackworth, J. W., No. 1 Ojai, Ventura Co.	11- 4-23	2,311	hd. sd. drilling
Scott Pet. Co., No. 1 Rincon, Ventura Co.	35- 4-25	4,280	hd. sd. drilling
Shell, No. 3 Grubb, Ventura Co.	26- 2-22	1,350	sd. sh. drilling
Shell, No. 2 Berlywood, Moorpark	32- 3-20	7,184	cemented
Continental, No. 1 Sulphur Mountain, Ventura Co.	21- 4-22	145	sd. drilling
Miley Oil Co., No. 1 Red Mountain, Ventura Co.	7- 3-25	980	suspended
Milham Explts., No. 1-A Buttonwillow, Kern Co.	8-28-23	4,662	gas well
Milham Explts., No. 2 Buttonwillow, Kern Co.	8-28-23	2,730	gas well
Milham Explts., No. 3 Buttonwillow, Kern Co.	8-28-23	2,894	gas well
Milham Explts., No. 4 Buttonwillow, Kern Co.	5-28-23	2,870	gas well
Milham Explts., No. 5 Buttonwillow, Kern Co.	5-28-23	740	sd. drilling
Doheny-Stone, No. 1 Sallsbury, Kern Co.	7-29-24	4,291	hd. sd. drilling
Southern Calif. Gas Co., No. 1 Buttonwillow, Kern Co.	4-28-23	2,830	testing
Southern Calif. Gas Co., No. 2 Buttonwillow, Kern Co.	10-28-23	Mtl.	building rig
Richfield Oil Co., No. 1 Semitropic, Kern Co.	21-26-22	1,620	suspended
Pacific Eastern, No. 1 Union Ave., Kern Co.	6-30-28	5,640	suspended
Pacific Eastern, No. 2 Union Ave., Kern Co.	6-30-28	4,500	testing
Pacific Eastern, No. 3 Union Ave., Kern Co.	6-30-28	.....	location
Jackson & Chamberlain, No. 1 Bakersfield, Kern Co.	19-29-28	601	sd. sh. drilling
O'Donnell, J. E., No. 1 Greenfield, Kern Co.	31-30-28	4,030	suspended
The Texas Company, No. 1 Arvin, Kern Co.	22-31-29	.....	location
Stabler, W. W., No. 1 Comanche Point, Kern Co.	23-32-29	2,490	sd. sh. drilling
Midway Northern, No. 1 Edison, Kern Co.	29-29-30	3,350	fishing
North American, No. 1-A Delano, Kern Co.	5-25-26	5,700	to abandon
General Pet., No. 1 McFarland, Kern Co.	35-25-25	Rig	rigging up
McVey, Max, No. 1 Shafter, Kern Co.	8-28-25	Rig	rigging up
Fresno Madera Oil Co., No. 1 Clovis, Fresno	18-12-21	4,066	suspended
Texas Pacific, No. 1 Brown, San Luis Obispo	26-32-14	2,875	hd. sd. drilling
Richfield, No. 1 Wreden, San Luis Obispo Co.	10-29-17	3,730	suspended
Richfield, No. 1 Carissa, San Luis Obispo Co.	15-29-17	3,735	hd. sd. drilling
Union Oil Co., No. 1 Huasna, San Luis Obispo	34-32-15	2,275	hd. sd. drilling
San Luis Syndicate, Well No. 1, San Luis Obispo Co.	29-31-15	2,901	sd. sh. drilling
Sequoia Oil Co., Well No. 1, San Mateo Co.	13- 7- 5	1,515	hd. sd. drilling
Shell, No. 1 Cowell, San Mateo Co.	8- 6- 5	5,906	fishing
Shell, No. 2 Cowell, San Mateo Co.	8- 6- 5	1,559	to set pipe
Shell, No. 1 Butts, San Mateo Co.	16- 6- 5	2,584	fishing
Shell, No. 1 Mossi, Petaluma	8- 5- 8	1,810	hd. sd. drilling
R. Y. Hanlyn, Well No. 1, Alameda Co.	3- 5- 2	165	sd. drilling
Thomas & Hammill, Well No. 1, Alameda Co.	16- 3- 3	1,070	water trouble
Tepesquit Oil Co., Well No. 1, Santa Barbara Co.	3- 9-32	2,150	hd. sd. drilling
Becker, Geo. F., No. 1 Summerland, Santa Barbara Co.	33- 4-25	3,045	testing
Twin State Oil Co., No. 1 Modoc, Santa Barbara Co.	20- 4-27	3,900	hd. sd. drilling
Fort Wayne Synd., No. 1-A Goodcell, Madera Co.	22-10-17	Rig	suspended
Continental Oil Co., No. 2 Smith, Colusa Co.	31-18- 4	4,300	cleaning out
Colus Oil Co., Well No. 1, Colusa Co.	31-15- 4	380	redrilling
Nuna Oil Co., Well No. 1, Colusa Co.	19-15- 4	350	sd. drilling
Superior Oil Co., No. 1 Calivada, Colusa Co.	31-15- 4	340	sd. drilling
Marland Oil Co., No. 1 Bradley, Monterey Co.	32-24-11	2,780	fishing
North Counties Oil Co., Well No. 2, Humboldt Co.	36- 2- 1	2,110	hd. sd. drilling
Humboldt Oil Co., Well No. 1, Humboldt Co.	6-21- 1	3,035	hd. sd. drilling
Tuck, J. W., Well No. 1, Santa Clara Co.	9- 8- 1	312	sd. sh. drilling

TANKER SHIPMENTS FROM LOS ANGELES TO ATLANTIC AND GULF COAST PORTS

Commodity—	Total This Week	Daily Average	Total Last Week	Daily Average	This Year to Date	Same Time Last Year
Crude oil	.....	.....	175,406	25,058	2,034,667	2,978,804
Fuel oil	111,621	15,946	.....	.....	111,621	3,562,187
Diesel and gas oil	.....	.....	75,989	10,856	757,927	1,386,653
Gasoline	248,784	35,541	230,927	32,990	3,801,023	2,896,717
Coastwise—						
Crude oil	574,399	82,057	626,794	89,542	6,982,180	10,493,394
Fuel oil	282,671	40,382	299,676	42,810	6,692,689	4,767,957
Diesel and gas oil	31,006	4,429	46,020	6,574	509,728	95,603
Gasoline	225,333	32,190	236,892	33,842	4,243,974	3,147,388
Kerosene	.....	.....	.....	.....	24,415	45,068
Tops	.....	.....	.....	.....	171,568	.....
Exports—						
Crude oil	.....	.....	67,816	9,688	812,042	1,400,029
Fuel oil	301,997	43,142	450,404	64,343	8,942,949	10,776,424
Diesel and gas oil	41,548	5,935	30,614	4,373	997,520	524,261
Gasoline	31,910	4,559	69,512	9,930	1,638,045	1,095,776
Tops	.....	.....	.....	.....	.....	227,204
Kerosene	.....	.....	180,817	25,831	1,710,736	1,617,144

TANKER SHIPMENTS FROM SAN FRANCISCO TO ATLANTIC, GULF COAST PORTS

Diesel and gas oil	.....	.....	.....	.....	342,426	415,555
Gasoline	77,950	11,136	.....	.....	891,459	961,581
Lubricants	69,255	9,894	.....	.....	208,024	111,970
Coastwise—						
Fuel oil	3,910	558	174,321	24,903	1,353,097	2,267,743
Diesel and gas oil	3,853	550	10,093	1,442	112,382	173,724
Gasoline	77,072	11,010	83,633	11,948	1,390,676	2,013,333
Kerosene	2,491	356	4,923	703	83,054	90,621
Exports—						
Crude oil	.....	.....	.....	.....	25,029	.....
Fuel oil	70,150	10,021	70,461	10,066	870,773	866,084
Diesel and gas oil	.....	.....	.....	.....	10,400	.....
Gasoline	163,852	23,407	12,582	1,798	1,613,879	1,544,139
Kerosene	.....	.....	.....	.....	307,089	535,647
Lubricants	.....	.....	.....	.....	.....	9,120

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Albercas Well Flows 60 Barrels Hourly

Webb County Producer Divides Interest With Magnolia Well in New Cole Field Reported Flowing 450 Bbls.

By B. D. Stevenson
Staff Correspondent, Southwest Texas Fields

SAN ANTONIO, Tex., May 14.—O. W. Killam's No. 8 Bruni in the new Albercas Pool in Webb County, which last week in sand at 2,176-82 feet was standing 1,380 feet in oil on Friday night was flowing at the rate of 60 bbls. an hour through tubing. The well jumped to the place of first interest in southwest Texas and divides honors with the Magnolia Petroleum Co.'s No. 1 Valdez in the new Cole Field, which at last report was flowing 450 bbls. from a sand at 2,328-37 feet. The two wells are many miles apart and have no connection.

Killam's well in Block 64 of the Bruni subdivision of the Albercas grant was swabbed through tubing that had been set in the well with packer. It failed to flow through the casing but when swabbed through the tubing flowed 345 bbls. the first 24 hours. At the end of the first 24 hours it was flowing at the rate of 500 bbls. per day and the second day flowed approximately 1,000 bbls., but was steadily increasing. Friday it flowed 1,300 bbls. and at the close of the 24-hour period was flowing at the rate of 60 barrels an hour.

The Albercas Pool was opened with a gas well and several wells were completed in the sand at about the depth of No. 8 Bruni, and have been going into the gas line. A few weeks ago some of the wells were discovered making considerable oil and locations were made to the east of the gassers, all of which were in Block 65. No. 8 Bruni is 75 feet east of the west line of Block 64 and is 1,470 feet north of the south line. Killam-Simms late last week were bailing their No. 2 Bruni 225 feet west and 300 feet south of No. 8 Bruni, and Newton Drilling Co. had casing set ready to bring in its No. 2 Bruni 225 feet west and 300 feet north of Killam's No. 8 Bruni. These wells are the farthest east in the new pool. The blocks each contain approximately 217 acres.

Caldwell County

Most of the new wells in the new pool in Caldwell County, 4 miles south of Lockhart, are in the Austin chalk, some showing a little oil, and before this reaches The Oil and Gas Journal readers the final verdict should be reached on some of them. The Texas Company's No. 1 Medford, a half mile northeast of the discovery well (No. 2 Branyon) topped the chalk at 1,843 feet and it showed a little oil. It is coring all the thickness of the chalk and may not therefore reach a final verdict for another week since coring is a slow process. No. 1 Branyon, 600 feet southeast of it and a dry hole though it showed a little oil, got the top of the chalk at the same depth and the elevation is practically the same. The showing of a little oil in the top of the No. 1 Medford was cause for considerable elation. Claude Smith's No. 1 Lancaster, another half-mile to the northeast, got the top of the chalk at 1,985 feet and had a little showing of oil in the chalk. It failed to get a drill stem test and was drilling late last week at about 2,100 feet and may go down to the Edwards lime. The Texas Company's No. 1 Teas, a mile southwest of No. 2 Branyon, got the top of the chalk at 1,910 feet. Charles Carter and others, 600 feet southwest of the discovery well, were close to chalk depths late last week and expected to get it at about 2,075 feet where the discovery well got it.

One new test is starting in the field. Pat Armstrong and associates were rigging up late in the week on the 4-acre schoolhouse tract about 1,500 feet west of the discovery well and regardless of the results on other wells he will drill his.

Production from No. 2 Branyon, which is being taken by the Magnolia Petroleum Co., is running close around 250 to 275 bbls. a day. It stops flowing but starts again when agitated with the bailer. The well yet lacks 30 feet of having drilled to the bottom but as long as its present production keeps up it will be left as it is.

Bruner Field.

In the Bruner Field, No. 1 Davis, the discovery well, is making 20 to 30 bbls. a day and it, too, has been connected to the Magnolia pipe line. Bruner has started No. 1 Wilson, 820 feet north of No. 1 Davis and drilled 400 feet the first day, starting to drill last Thursday. It was spudded in months ago and then shut down while No. 1 Davis was being deepened. Luling Oil & Gas Co. spudded in early last week No. 2 Carter, but due to trouble made only about 300 feet by Friday. It is 3 miles northeast of the Bruner well and 6 miles south of the Branyon well. T. C. Hadley's No. 1 Heise, midway between the Bruner and Carter wells, was rigging up late last week. Closer to the Bruner well and in the same lease block it was expected that Rodgers, Heep & Haun would have a derrick going up early this week on the Bridges tract on a location about 750 feet west of the discovery well. Other tests in that territory previously announced haven't started yet with the exception of Detex Oil Co., 1½ miles northwest of the discovery well on the M. August land. It was drilling and down about 900 feet Friday.

Cost of Wells.

It is going to cost around $6,000 to drill and complete and equip a well in either the new Lockhart or the Bruner Fields or the wildcats around them. Cost may run to as high as $6,500. Operators drilling their own wells and counting cost only may do it for a little less. The drilling is not difficult and wells are put down in a short time. No. 2 Branyon, or discovery well, was drilled and brought in in 10 days.

Laredo District

Magnolia Petroleum Co. late in the week completed No. 1 Valdez in the new Cole oil field in Webb County. Cole wells are all in Survey No. 412 but the Magnolia well is in Survey 754 next north. It was flowing Friday at the rate of about 450 bbls. a day. It is one of the best in the field and also extends the field considerably to the north.

This makes the ninth producing oil well in that field, all coming in with considerable gas at first and the gas decreasing and the oil increasing. Cole Petroleum Co. will offset the Magnolia well 300 feet south with No. 61 Benavides.

COMPLETIONS

Caldwell County

Fred Adams' No. 1 O. T. Moore, offsetting The Texas Company's No. 1 O. T. Moore, Dale Field, has been completed at 2,256 feet, 75 barrels initial production, now making 100 to 150 barrels daily.

The Texas Company's No. 7 Lackey, J. Gilbert Survey, Dale Field, has been abandoned dry, having only a small showing of oil.

Nueces County

Saxet Oil Co.'s No. 3 Weil, Saxet gas field, 250 feet south of railroad and 250 feet west of No. 1 Perry & BaPrelle, has been completed at 2,300 feet, a good-sized gas well.

Refugio County

Houston Oil Co.'s No. 1 M. F. Lambert, D. Fox survey, in new field 7 miles east of the regular Refugio gas field and offsetting Houston Gulf Gas Co.'s discovery well in the field, at 2,011 feet has been completed with 700 pounds rock pressure, volume of the gas not gauged.

San Patricio County

Saxet Oil Co.'s No. 1 White Point Development, completed as 20,000,000-foot gas well at 2,500 feet; No. 14 Rachal, at 1,900 feet approximate depth, is a gas well of 20,000,000 feet.

Houston Oil Co.'s No. 4 Humble, at 2,306 feet, completed 30,000,000-foot gas well; No. 3 Humble, completed as producing gas well in 2,300-foot sand; No. 1 Humble, completed several months ago but used to pump water in, in effort to kill Saxet Oil Co.'s No. 7 Rachal, wild gasser, has been brought back as producing gas well.

Webb County

Magnolia Petroleum Co.'s No. 1 Valdez, Survey 754, Cole Field, at 2,337 feet, is flowing 450 barrels.

O. W. Killam's No. 8 Bruni, Block 64, Albercas Field, at 2,176 feet, has been completed making 500 barrels; well still increasing its flow.

Abandoned Tests

Moody Oil Corp.'s No. 15 Palacious, Survey 291, Block 22, Aviator Field, has been abandoned at 1,300 feet after testing dry.

O. W. Killam's No. 1 Bailey, W. R. King survey, Guadalupe County, has been abandoned in Edwards which carried water.

George Williams trustee No. 1 Terrell, Refugio County, 6 miles southwest of Refugio, has been abandoned dry at 3,580 feet.

Houston Gulf Gas Co.'s No. 1 Virginia Hallinan, Refugio County, has been abandoned at 3,000 feet approximate depth; No. 2 Waelder, Calixto survey, San Patricio County, has ben abandoned at 3,200 feet dry.

Harry Carter No. 1 Mayfield, leases were lost and location has been abandoned.

Houston Gulf Gas Co.'s No. 1 J. M. Bennett, San Patricio County, Roos subdivision, abandoned location.

NEW LOCATIONS

Bexar County

Witherspoon Oil Co.'s No. 1 is location 12 miles southwest of San Antonio, near Macdonna.

Caldwell County

Suttle and others' No. 1 Joseph Wilson, A. Floyd survey, is location in northeast 54 acres of the farm.

Rodgers, Heap & Haun's No. 1 Mrs. A. C. Bridges, A. Floyd survey, is location 150 feet to northeast and southeast lines.

T. C. Hadley's No. 1 Thomas Wilson, J. Radford survey, is location with contract let; No. 1 Fannie Heise, Gerren Hindes survey, is rigging up.

M. W. Eiser No. 1 Cora Malone, A. Floyd survey, is location 150 feet to northwest and northeast lines, with drilling to start by May 28.

United North & South Oil Co.'s No. 1 F. M. Branyon, Dillard Cooper survey, 150 feet to west line of survey and 150 feet to south line of lease, has been spudded in and is drilling.

W. H. Kennon and associates No. 1 H. & A. Troell, B. Fuqua survey, 150 feet to CNL, is building derrick, Guadalupe County wildcat.

Golden West Oil Co.'s No. 2 Adams, Medina County, Adams gas field, Survey 14, Lot No. 2, has been spudded in.

R. V. Hill No. 1 Ramirez, Survey 627, Zapata County wildcat, is rigging up.

Houston Gulf Gas Co.'s No. 15 Palacious, Survey 291, Block 11, Randado field, Jim Hogg County, is rigging up.

Robert Driscoll's No. 12 Driscoll, Survey 23, Driscoll Field, Duval County, has

(Continued on Page 129)

FRIO COUNTY TEST DISAPPOINTMENT BUT OTHERS MAY BE DRILLED LATER

By B. D. Stevenson

SAN ANTONIO, Tex., May 14.—Blue Ribbon Oil & Gas Co. failed to get a drill stem test in its No. 1 Edwards in the northern edge of Frio County and about 6 or more miles south of the Adams gas field in Medina County. It was a distinct disappointment. There are three sands in the lower part of the hole and the desire was to test each separately. To set casing would be doubtful as it is uncertain which sand the showing of gas and oil was coming from. No. 1 may be carried down to the Edwards lime and another hole drilled later to the sands in No. 1. Total depth of No. 1 is 2,470 feet and the last sand was a 20-foot sand from 2,450 feet.

Efforts are being made to rework No. 1 Blackaller of P. A. Neilan several miles farther west in Frio County, which is standing at 2,975 feet. The well is said to be making some gas and a little showing of oil. It has been standing for months at that depth. No. 1 Blackaller deepened by Neilan also had a showing of oil and gas but failure to core and uncertainty as to where the showing is coming from makes it difficult.

East of Seguin

Wildcatters are going back into the territory east of Seguin in Guadalupe and west of the Guadalupe County end of the Luling field. Three or four wells have been drilled lately. O. W. Killam drilled some. Eugene Sights, who drilled some a couple of years ago, has the location for one of three wildcats he is going to put down, and W. H. Kennon of San Antonio is starting one. Killam is going to drill some more.

Other than this, the Caldwell County situation is most interesting to wildcatters at this time. Sutton & Smith's No. 1 Carter, in the northwest part of the Gerren Hinds survey, with the hole in bad shape, still makes some oil. The Luling Oil & Gas Co. has been organized and has taken over the block and is starting a new test 900 feet east, and late last week was down about 300 feet, and T. C. Hadley, a little southwest, was nearly rigged up on No. 1 Heise. Wildcatters in this territory, which extends north and a little east from the town of Luling towards Lockhart, are going after an uncertain formation, and are not relying so much on geology as they are that they see "the oil coming out of the hole." When the Smith-Dutton No. 1 Carter got a showing oil oil somewhere around the base of the Austin chalk it was not treated as of much importance, though the showing, if it had come from other horizons, would have been ample to create excitement. But when Bute-Texas Company's No. 2 Branyon started off and flowed 670 barrels from around the same horizon, and that, too, after Bruner some weeks before got a well flowing about 30 barrels from the same horizon, the two being 9 miles apart, it attracted atten-

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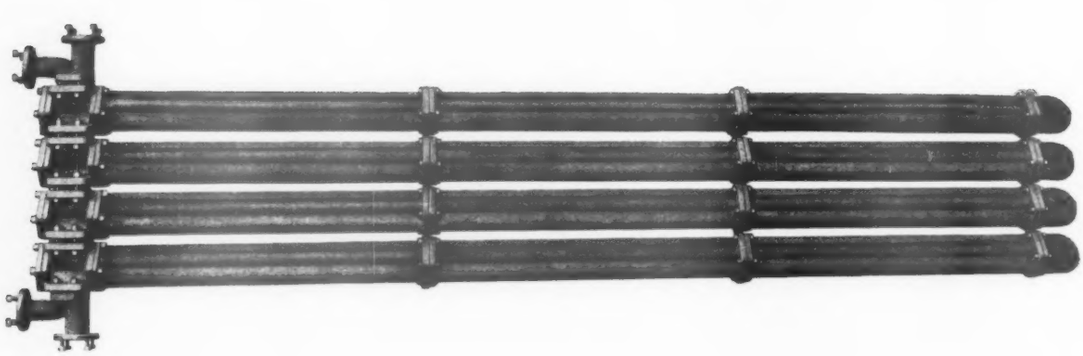

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Gulf Output Highest Since December

Due to Completion of Several Good Wells in Past Two Weeks. Two 1,000-Bbl. Producers Completed at Spindletop

By Neil Williams
Staff Correspondent, Gulf Coast Fields

HOUSTON, Tex., May 14.—The completion of several good wells in the past two weeks was reflected noticeably in Gulf Coast production figures for the past week with an increase in the daily average output of 8,550 bbls. The total daily average output amounted to 136,860 bbls., the highest since the middle of last December.

Sharp gains were made at Spindletop, Pierce Junction, Blue Ridge and South Liberty, each of which has contributed at least one good well in the past 10 days. However, the only completion of importance the past week was at Blue Ridge, where Gulf Production Co. brought in its No. 11-B Blakely, flowing at the rate of 2,500 bbls. daily.

The Spindletop increase was due chiefly to two 1,000-bbl. wells brought in late the previous week by Yount Lee Oil Co., while the gain at South Liberty was caused by Sun Oil Co.'s No. 3 Mitchell coming in initially for 3,000 bbls. daily 10 days ago. Pierce Junction's production was swelled more by general increases on leases rather than by new wells, although several fair producers have been added recently.

Daily Average Production

Daily average production by fields for the week ending May 12 was:

Spindletop	40,538
Saratoga	1,231
Batson	1,382
Goose Creek	7,380
Sour Lake	3,483
Hull	10,989
Big Creek	1,453
Dewalt	315
West Columbia	7,985
Humble	3,379
Pierce Junction	13,699
Blue Ridge	9,977
Markham	225
Orange	4,504
Damon Mound	935
Dayton	180
South Liberty	4,632
High Island	271
Moores Field (Orchard)	56
Boling	3,533
Nash Dome	1,950
Barbers Hill	600
Allen Dome	185
Vinton	4,989
Starks	184
Edgerly	1,105
Evangeline	1,064
Lockport	4,251
Sweet Lake	...
Sulphur	2,766
Hackberry	3,275
*Sorrento	...
Loreauville (Eagle Point)	31
Bayou Boullion	175
Anse La Butte	60
Miscellaneous	78
Total this week	136,860
Total last week	128,310
Increase	8,550

*Production shut in.

Daily average production of East Central Texas and Southwest Texas fields continued fairly steady with only slight declines being suffered. Production in these fields was:

Southwest Texas

Somerset	2,167
Lytton Springs	1,413
Dale	1,094
Luling	13,920
Miscellaneous	7,955
Total this week	26,549
Total last week	26,563
Decrease	14

East Central Texas

Mexia	7,226
Cedar Creek	585
Nigger Creek	690
Currie	484
Wortham	1,855
Richland	598
Powell	11,558
Total this week	22,926
Total last week	23,058
Decrease	132

More Drilling Activity

Although with the exception of Gulf Production Co.'s Blue Ridge well, coastal field operations yielded little of importance in the way of new production the past week, a little more activity is being reflected in drilling and companies and individual operators are showing a greater tendency to wildcat and test prospective salt domes.

Blue Ridge, 15 miles southwest of Houston in Fort Bend County, and the East Hackberry Dome of Cameron Parish, Louisiana, the latter a semifield, are receiving particular play at present in new work. In Blue Ridge, where good producers have been brought in to the northwest and also to the east, 8 to 10 new tests are being started and at East Hackberry a half-dozen operations are getting under way, most of which are by Yount Lee Oil Co., on state water leases.

Spindletop, the oldest of Texas coastal fields, continues in the limelight with Yount Lee Oil Co. keeping a dozen rigs running, although part of these are on old wells being worked over. This field is being watched at present with The Texas Company to make a test this week in its No. 1 Gladys City, 600 feet northwest of production on the west flank. This test has an oil sand around 4,650 feet.

Pierce Junction, just south of Houston, also is fairly active and promises considerable interest with several extension tests and deep prospects in the drilling play going on there.

Dewalt Dome

On the new Dewalt Dome in Fort Bend County, Humble Oil & Refining Co. soon will have its second rig running as a derrick now is being built for No. 2 Sugarland Industries. This test is 750 feet northeast of the discovery well, which is flowing better than 300 bbls. of pipeline oil daily into the new line completed to the Pierce Junction Field. This company's No. 1 Brazos, southeast of the discovery well, is drilling at 1,600 feet. Included in the testing of this vicinity is Vacuum Oil Co.'s No. 1 Levy, 3 miles south of Dewalt in the Thompson district, which recently was the center of an active leasing play. This test the latter part of the week was drilling at 1,631 feet in gumbo.

Whitecastle Dome

Location for the second test on the Whitecastle Dome of Iberville Parish, Louisiana, was made during the week by Roxana Petroleum Corp. and also one for the second test on the Black Bayou prospect, west of Hackberry Dome in Cameron Parish. The latter is 2,540 feet from the east line and 1,030 feet from the north line of Section 7-12s-12w. The first tests drilled on each of the prospects encountered favorable showings, but were abandoned recently. Canals are being dredged to each of the new locations.

A location for another rank wildcat has just been made in Jefferson Parish, Louisiana, in Section 30-14s-24e, just south of New Orleans. This will be drilled as No. 1 Hero by Gusher Bill Syndicate. This part of Louisiana has been the center for considerable geophysical exploration work by larger companies.

Wildcatters also are reaching up into Polk County, where 2½ miles east of New Willard, W. H. Freeman and associates have a location for No. 1 fee, 4,000 feet from the south line and 1,089 feet from the west line of the survey. Three miles south of Brenham, Washington County, Trinity Drilling Co. made location during the week for No. 1 Giddings in the J. Cole Survey, 830 varas east and 150 varas south of the southeast corner of the E. Allcorn Survey.

In Harris County, Martin and associates have taken over the abandoned test drilled to 3,517 feet by P. S Griffith as his No. 2 fee, and are sidetracking to deepen. This is 10 miles north of Houston and in the Adams Smith Survey. Also in Harris County, 2 miles northwest of Barbers Hill Dome, Chambers County, and 8 miles north of Goose Creek, Cedar Bayou Oil Co. has a rig up for No. 1 Johnson. Cypress Oil Co. has made location for No. 2 Fritz Kitzman in the H.&T.B. Survey No. 1, 50 feet north of No. 1 originally drilled by the Juanita Oil Co. Hunt and associates' No. 1 Adorie-Lobit, 4 miles north of Goose Creek, is drilling at 2,150 feet.

Moss Bluff Dome

Humble Oil & Refining Co is moving in derrick material for its first test, No. 1 Sterling, on the Moss Bluff Dome prospect, southern Liberty County, where Roxana Petroleum Corp. months ago did some drilling. Moss Bluff is about 8 miles southeast of the South Liberty Field and about 15 miles northeast of Barbers Hill, and between which lies Pure Oil Co.'s Lost Lake Dome.

Gulf Production Co. has abandoned another test, No. 5 Bordages, at Fannette Dome, Jefferson County, 18 miles south of Spindletop. This was in cap rock at a total depth of 1,995 feet. Bowman and associates also drilled into anhydrite on their Stratton Ridge, Brazoria County, wildcat, and abandoned it at 3,760 feet.

In Austin County, Alexander & Lyles have abandoned their No. 2 Gobel at 3,779 feet, this having tested drill in a drill stem test. Weadock and associates are putting up a heavy rig to deepen their No. 1 Ward in the H.&T.C. Survey. The hole is at 2,020 feet. Humble Oil & Refining Co. is building a derrick for No. 1 Dittman, Colorado County In the same county, 4 miles northeast of Sheriden, Johnson Brothers spudded in their No. 1 Beckett Saturday. E. M. Masterson's No. 1 Miller, same county, is drilling gumbo at 620 feet, and Rich Oil Corp.'s No. 1 Von Rosenburg fee is drilling at 2,604 feet.

At Raccoon Bend, Austin County, Humble Oil & Refining Co.'s No. 1 Wilson is drilling in shale and shell streaked with sand at 4,233 feet. No. 1-A Grawunder is in dry shale at 3,571 feet. Humble's No. 4 Warren at Hockley, Austin County, is in sand rock at 573 feet.

Allen Dome

Roxana Petroleum Corp. is sidetracking at 4,903 feet in No. 1 Random, Allen Dome, southern Brazoria County. This test was in a sand at 4,942 feet, where it was brought in several weeks ago blowing gas and spraying 64 bbls. of oil It later stopped producing and is to be deepened.

In the New Iberia Field, Iberia Parish, Louisiana, White and associates' No. 1 Bernard, an old well drilled by the Gulf Refining Co. and in March taken over by its present owners and worked over, is reported by the owners as pumping 100 bbls. of pipe line oil daily. This well was reported by scouts at the time of its completion early in April as pumping 200 bbls. of fluid, 5 bbls. oil. The operators state the well put 500 bbls. of pipe line oil in storage the first five days.

South Liberty—Liberty County

The only completion the past week at South Liberty was Yount Lee Oil Co.'s No. 4 Mitchell in the extension district just north of the main field, which came in flowing by heads at the rate of approximately 50 bbls. daily from sand at 3,614 feet. This well soon stopped flowing and is being put on the beam. Sun Oil Co.'s No. 3 Mitchell, which came in the previous week making 3,000 bbls. of pipe line oil, has dropped off until Saturday it was flowing only at the rate of 950 bbls. The latter company has a rig up for No. 4 Mitchell, which is 150 feet west of No. 3. Sun Oil Co. also is drilling a cavity well for the disposal of salt water. The Texas Company is drilling out the back pressure valve in No. 9 Staiti to deepen this hole from 3,254 feet. No. 10 Staiti is drilling shale and boulders at 2,690 feet. Yount Lee Oil Co. has a rig up for No. 5 Mitchell.

The extension a mile north of the South Liberty Field has virtually dropped out of the picture. Abercrombie & Harrison have abandoned their entire Lacour lease, including their No. 1 well, which originally came in flowing 125 bbls. daily. This well was deepened to 2,867 feet in caprock and then went back to sand at 2,813-33 feet, where it was put on the pump. It pumped 45 bbls., stopped producing, and now has been abandoned. Two additional locations which were made when the extension was opened in February have been abandoned. Sun Oil Co. also has abandoned its No. 1 Singleton, which came in a salt water well at 1,846 feet, was deepened to cap rock at 2,067 feet. Only two tests remain drilling in this district, The Texas Company's No. 1 Pickett, the farthest west, which is down 3,168 feet in gumbo, and The Texas Company's No. 4 Green, which is in gumbo at 1,878 feet.

Blue Ridge—Fort Bend County

Gulf Production Co.'s No. 11-B Blakely which came in last Tuesday flowing between 2,000 and 2,500 bbls. daily, is holding unusually well in production. This well is of importance because of its gravity, the oil testing 42.3 degrees. It offsets Sinclair Oil & Gas Co.'s No. 3 Davidson, which came in flowing 1,000 bbls., but in which the oil tested only 24 gravity. The Gulf well is producing from sand at a total depth of 3,797 feet. Total depth of Sinclair's well was 3,554 feet. Blue Ridge got another well, Fort Bend Oil Co.'s No. 2-C Blakely, flowing 275 bbls. from sand at 2,878 feet. This was an old test previously reported as abandoned.

Gulf Production already has a rig up for No. 12-B Blakely, and in addition to this there is considerable other activity getting under way. Navarro Oil Co. has a rig up for No. 6-A Robinson, and a derrick for No. 5-B Robinson. This company's No. 4-B Robinson showed only gas when tested at 3,872 feet and is being deepened. Watts Brothers' No. 2 Scott has been spudded in and is down 1,202 feet. Watts Brothers' No. 4 Blakely is drilling at 1,625 feet. Bowden Oil Co.'s No. 2 Overly is drilling around 2,600 feet. Gulf Production Co.'s No. 13 Luscher is drilling at 2,435 feet. H. R. Cullen is drilling at 5,200 feet, and his No. 2 Davidson at 3,940 feet. His No. 2 Blakely is at 2,232 feet.

Big Creek—Fort Bend County

Navarro Oil Co. has started drilling in its No. 1 Davis (Hampel). Gulf Production Co.'s No. 46 Davis is drilling at 2,646 feet, and its No. 25 Davis, an old well being deepened, at 3,010 feet.

Nash Dome—Fort Bend County

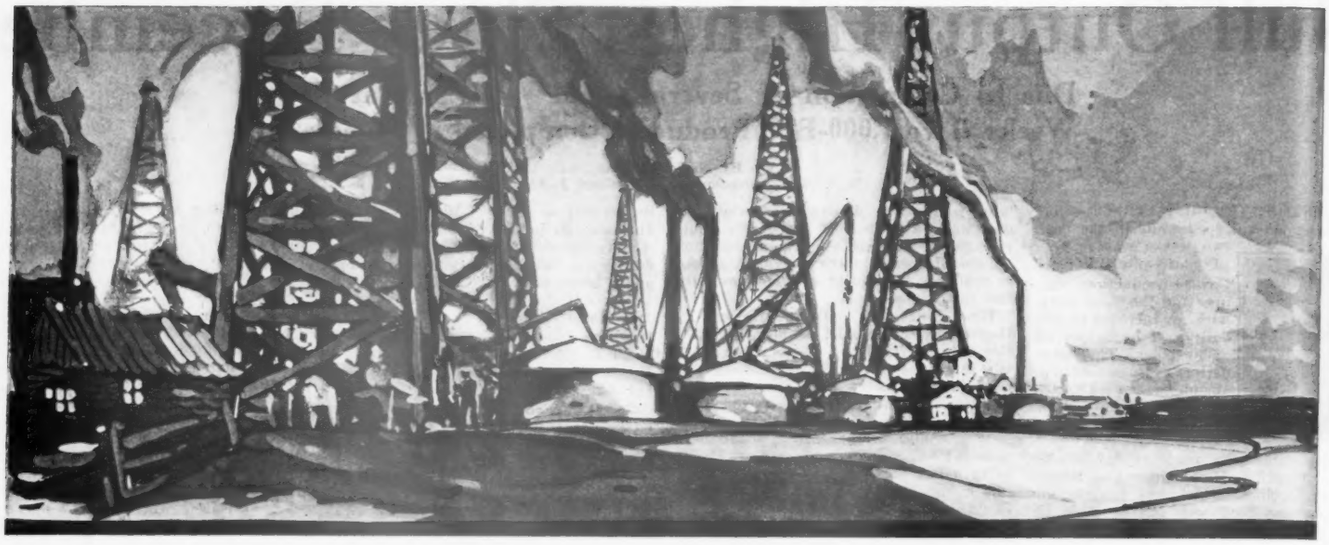
Rycade Oil Corp.'s No. 24 Wisdom tested salt water at 4,267 feet when bailed during the week and is to be deepened. Rycade has made location for No. 1 J. Meier, which is 800 feet east and 300 feet north of the southwest corner of the tract in the H. N. Cleveland survey.

Hardin County Domes

At Batson, Paraffine Oil Co. has abandoned its No. 72 Paraffine at 1,126 feet. Capitol Oil Co. is cutting liner in No. 10 Hodges to deepen the hole from the sand at 3,885 feet, at which it was completed the middle of April. East Batson Oil Co.'s No. 6 Conzelman is drilling at 1,010 feet.

Chappell Hill Oil Co.'s No. 1 Hale,

(Continued on Page 132)



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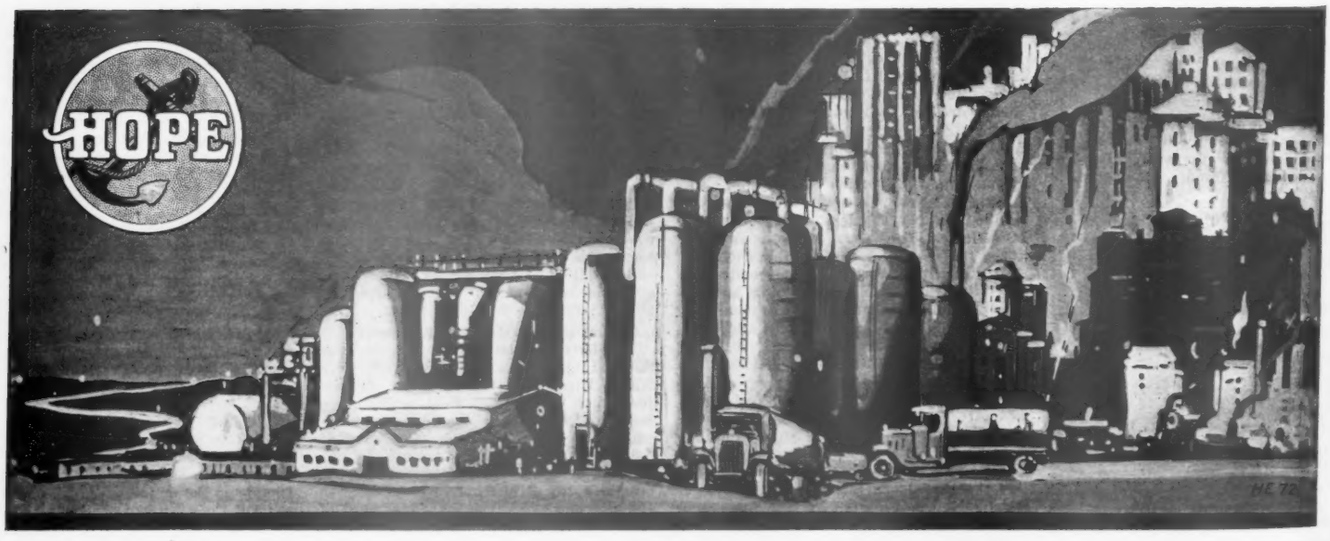

Largest Gas Well in Cartersville Area

Gauges 42,000,000 Feet at 1,030 Pounds. Cotton Valley and Champagnolle Waiting for Outcome of Tests to Deeper Horizons

By D. H. Bancroft
Staff Correspondent, Louisiana-Arkansas

SHREVEPORT, La., May 14.—Completion of the largest gas well yet brought in in the Cartersville district of northeastern Bossier Parish relieved the monotony of a period of watchful waiting that has descended upon the industry in this division—watching and waiting to see what the next tests in the deeper horizons in Cotton Valley and Champagnolle will produce. There are two or three in each field scheduled for completion during the next 10 days or two weeks, and meanwhile 12 or 15 more are under way in Cotton Valley and about 30 in Champagnolle. Cartersville's star performer was Natural Gas Products Co.'s No. 1 United States Government in Section 31-23-11, in the southeastern extension of proven territory. Completed May 6 in 4 feet of sand, total depth 3,069 feet, it gauged 42,000,000 feet of gas at 1,030 pounds, indicating that the pull on Cartersville to supply Magnolia and Arkansas Natural Gas Corp. lines has not perceptibly diminished the field's average rock pressure.

Cotton Valley operators are waiting on Humble Oil & Refining Co.'s test of No. 2 Webb, in Section 14-21-10, which has 6⅝-inch casing cemented at 4,270 feet; Louisiana Oil Refining Corp.'s No. 1 Davis in Section 23-21-10, which is down 4,681 feet and Magnolia Petroleum Co.'s No. 1 D. G. Cox in Section 22-21-10, which has plugged back to 4,700 feet from 4,752 feet, where it had a show of gas with about 3,500 feet of salt water in the hole, as a means of cutting off the water. The Humble company's test is a little over a mile east and slightly north of Ohio Oil Co.'s No. 38 Bodcaw, the discovery well in the 4,600-foot area; the Louisiana's well is 1¼ miles east and a little south and the Magnolia's a half mile south. All the production that has been obtained so far, about 50 bbls. with 4,000,000 feet of gas in Woodley Petroleum Co.'s No. 1 L. C. Cox, and Ohio company's No. 2 Crichton, a 60,000,000-foot gasser, and Magnolia's No. 1 G. W. Cole, a 4,000,000-foot gasser, has been south of the discovery well. For this reason the wells east, especially the Humble company's since it is also a little north, will be particularly interesting. Magnolia company's No. 1 J. M. Mixon, in Section 22-21-10, a quarter of a mile east of the Ohio company's No. 2 Crichton, is milling on junk, total depth 4,347 feet and therefore date of its testing is indefinite. Results of wells completed in the new horizon since the Ohio discovery have not been exactly encouraging, but it is too early for that horizon to be condemned.

Champagnolle

The same applies to Champagnolle 3,200-foot pay where only one well has been tested since the Magna Oil Producing Co.'s big well gave the field its confirmation. This test, Lion Oil Refining Co.'s No. 1 Rowland in the NE cor. NE NE, Section 15-27-14, offsetting the Magna well on the west, tested 1,000 bbls. of water and about 100 bbls. of oil in 8 feet of sand, total depth 3,210 feet and set a full string of 4½-inch instead of a short string of 5⅜ as planned at first after coring 2 feet further into the sand which showed a greater saturation than the first 8 feet. Announcement of the water gave the more sanguine element considerable of a setback, but the next morning El Dorado had recovered itself and the attitude was that even if this test should be a water hole it would still be of value as an indicator and that salt water wells are necessary in order to show where not to drill.

However, the Lion company and the Arkansas Drilling Co., who drilled the hole, are confident the water was from an upper sand through a faulty casing seat at 3,192 feet or a split casing rather than bottom water. Meanwhile Magna company's No. 2 Rowland in the SW cor. SW NW, Section 14-17-14, a 120-bbl. producer at 2,974 feet, has drilled to 3,195 feet coring a white chalky lime in the last 10 feet without having found any sand below the original production. Rushing and others have cemented 6⅝-inch casing at 3,196 feet on No. 2 E. F. Gregory in the NE cor. W half NW SW, Section 11-17-14, to test 16 feet of sand, total depth 3,212 feet, and this will be the next well in unless the Lion company makes the second test of its well beforehand. Pure Oil Co. has two wells offsetting the Lion and Magna's No. 1 Rowland; No. 4 E. F. Gregory in the SE cor. SE SE, Section 10-17-14, just north of the Lion well, is drilling below 2,500 feet and No. 2 E. F. Gregory in the SW cor. SW SW, Section 11-17-14, is drilling around the same depth. No. 3 E. F. Gregory in the NW cor. SW SW, Section 11, offsetting No. 1, the discovery well, on the east and Rushing and others' No. 1 J. M. Gregory on the south, is drilling around 3,000 feet.

Forty-two Operations

Ten new wells got under way in the field during the past week bringing the total operations under way at present to 42.

Thirteen wells were listed as completions in various other proven areas of the division during the week, but three of those dropped from the report were either derrick or locations. R. L. Crook's No. 9 Larkin in Section 14-19-11, Bellevue Field, carried as a location since December, was dropped and Magnolia Petroleum Co. abandoned No. 18 Dillon in Section 21-21-15, Pine Island, as a derrick and No. 21 Dillon in Section 23-21-15, as a location.

Ellis & Markley's No. 5 Hunter in Section 14-16-12, Elm Grove district of Bossier Parish, was a 500,000-foot gas well at 1,950 feet. Haynes Brothers abandoned No. 2 Spell, Section 15-21-15, Pine Island, as a salt water hole at 3,194 feet after carrying it as cementing cavity since November. In the Richland Parish Field Rushton Drilling Co. completed No. 1-B Sartor, Section 9-16-6, as one of the big wells of the field, 49,140,098 feet of gas at 2,450 feet.

Arkansas Completions

Three of the completions were in Arkansas. J. J. O'Brien abandoned No. 5-B Haynie, Section 1-14-21, Nevada County, as a salt water hole at 1,163 feet where it had been standing plugged back from 1,175 feet since last September. Little Fay Oil Co.'s No. 7 Robertson, Section 25-15-16, Smackover, pumped 25 bbls. fluid, 10 per cent salt water from 29 feet of sand, total depth 2,057 feet, and C. E. Murdock abandoned No. 2 Murphy at 2,113 feet on which the derrick was blown down during the storm of April 23. This was a workover, started at 2,754 feet where it was a small producer in 1925, but had never had much more than grief since the workover started in November.

Harrison County, Texas, had a 250,000-foot gas well in Waterman Brick & Tile Co.'s No. 6 Hickman (completed April 11), total depth 2,435 feet and Panola County had two; Natural Gas Products Co.'s No. 3 Roquemore in the B. C. Jordan Survey, 2,500,000 feet of gas at 2,290 feet and No. 4 Roquemore 3,000,000 feet, total depth 966 feet.

In connection with the deeper drilling expected to become general in Smackover and El Dorado, it is interesting to note results in the Ohio Oil Co.'s deep test already under way, No. 7 Cramer in Section 22-15-16, Smackover. It was dry in the red beds at 3,424 feet and again on taking another core at 3,429 feet and is last reported drilling at 3,476 feet.

Daily Average Runs

Daily average runs from the field showed a nominal increase, 630 bbls. for the entire division, though there was a gain of 2,010 bbls. in Arkansas runs due to increasing production in Champagnolle, chiefly Rushing and others' No. 1 Gregory, in Section 11-17-14, which has been growing until yesterday, when it fell off somewhat.

Louisiana runs totaled 43,435 bbls., the decrease of 1,380 bbls. being due chiefly to decline in runs of Cotton Valley deep sand production although most of the pools contributed. Cotton Valley light oil runs were 710 bbls. under last week's and heavy oil shipments were off 130 bbls. Caddo light was off 110 bbls., Caddo heavy 135 and Elm Grove 195.

Arkansas runs were 86,115 bbls., Smackover heavy oil contributing 1,035 bbls. to the increase of 2,010 bbls., showing to what extent wells put off production by the storm of April 23 have been rehabilitated. Smackover light runs were 115 bbls. more than last week; Nevada County 162 and Champagnolle 750.

Daily average runs from the field from the several pools were:

Louisiana	Bbls.
Caddo, light	9,755
Caddo, heavy	3,760
Homer	4,430
Haynesville	6,280
DeSoto-Red River	4,120
Elm Grove	385
Bellevue	1,060
Cotton Valley, light	2,075
Cotton Valley, heavy	4,270
Urania	6,760
Pleasant Hill	540
Total	43,435
Arkansas	
Ed Dorado	5,320
Smackover, light	7,695
Smackover, heavy	51,125
Stephens	1,050
Nevada County	1,565
Lisbon	2,210
Champagnolle	7,050
Bradley	100
Total	86,115
Both States	129,550
Last week	128,920
Increase	630

NEW LOUISIANA GAS FIELD OPENED BY WELL IN EAST CARROLL PARISH

By D. H. Bancroft

SHREVEPORT, La., May 14.—Listed as a completion in 5 feet of sand at 2,349-54 feet and gauging 51,119,000 feet of gas at 1,040 pounds, with 1,000 bbls. of salt water, Palmer Corp.'s No. 1 O'Brien in Section 7-19-11, East Carroll Parish, is accepted as having opened a new northeast Louisiana gas field. When it was killed and drilled 4 feet deeper after making its first show, estimated at 10,000,000 feet of gas and came in again with salt water there was more or less doubt and skepticism concerning possibilities and probabilities of the area. But 51,000,000 feet of gas, even if salt water did come along with it, is too much to leave any doubt and now the question is in which direction does the main body of the new field extend, it being taken for granted that the new wildcat is an edge well just as the Gulf's England Planting Co. proved to be an edge well of the Richland Parish Field.

Palmer Corp., which owns a block of 43,000 acres on which the new well is located, will set about to determine this at once, planning a second well to be started within the next week or 10 days, location for which will be made this week. Meanwhile The Texas Company is drilling another East Carroll wildcat, which should be heard from about the time the Palmer Corp. gets its second well under way, or sooner. At last report this well, No. 1 Boone Live Oak Planting Co., was drilling at 2,472 feet, 118 feet deeper from the surface than the Palmer well, but as it is 18 miles east of the O'Brien producer this difference does not necessarily have any bearing on its chances for successful completion. The Texas Company and Palmer blocks join and Roxana Petroleum Corp. also has a large block in that territory, all of which has been thoroughly prospected with geophysical instruments by various interests.

Watching Other Wildcats

Beside The Texas Company and Palmer wells, northeast Louisiana has two more wildcats under way that will bear watching on the strength of gas shows obtained by previous wells by the same operators drilling the two in question. Louisiana Petroleum Co. is drilling No. 1 Daily in Section 6-11-7, Franklin Parish, about 40 miles south of the latest discovery, and Lochnager Oil & Gas Co. is starting its fifth attempt to develop commercial production in Catahoula Parish still further south. The latter got a big blowout in its first attempt and showings in the three holes completed since sufficient to warrant further prospecting, and this week it made location for No. 2 McMillan in Section 26-9-6. Louisiana Petroleum Co.'s first well in Franklin also showed considerable gas.

About 50 miles west of these locations, H. M. Roark and others of El Dorado, Ark., are drilling their fourth well on the Winnfield salt dome, 3 miles west of that town, in Section 19-11-3, Winn Parish, and drilling at 1,000 feet, have, according to information from Winnfield, missed the rock salt picked up at around 400 feet in the three previous tests.

May Link With Smackover

In Union County, Arkansas, two wells are under way between the north end of the Champagnolle Field and the east end of Smackover which may link those two areas, as both, it is understood, are to be drilled to the level of the new 3,200-foot sand in Champagnolle. Some time ago Stewart and others drilled two or

(Continued on Page 132)

NORTH LOUISIANA

Bossier Parish

Cartersville—Delaware-Louisiana Development Co.'s No. 4 Bollinger, Section 38-23-11, is drilling at 1,740 feet. C. H. Lyons and others have made location 1,980 feet north and 330 west SE cor. Section 36-23-11, for No. 1 Marx Meyer.

Elk Grove and Sligo—Sligo Syndicate killed 15,000,000 feet of gas with a flow of salt water at 1,635 feet in No. 2 Skannal, Section 14-17-12, drilled to 1,700 feet and shut down for orders. Woodley Petroleum Co. is drilling 6-inch plug at

(Continued on Page 131)

Lea and Winkler Wells Hold Attention

Believed Either to Indicate New and Large Pool or an Extension of Winkler County Field. Almost Impossible to Correlate

By Tolbert R. Ingram
Staff Correspondent, Rocky Mountain Area

DENVER, Colo., May 12.—A flow of 50,000,000 feet of wet gas from the lime at 2,927 feet in the Marland Production Co.'s No. 1 Eaves in the southeastern corner of Lea County, New Mexico, connected with reports that the Gilbert & Johnson's No. 1 Leek, 4½ miles to the south in Winkler County, Texas, was making 25,000,000 feet of gas and 6,000 bbls. of oil, served to excite operators in the belief that a new and important pool in that area is about to be opened up. The Midwest Refining Co.'s test 40 miles farther north added to the interest with a small show of oil. Two wells were abandoned in Eddy County, these being the Gates, Holman & Rehn's No. 1 Murdock, and Snowden & McSweeney's No. 1 Lawrence, both of which encountered sulphur water. The Midwest Refining Co. has made a location for a test on the Stony Butte structure in San Juan County.

The Florence district in Fremont County, Colorado, established a new production record and among the developments in that pool were several completions, though none were out of the ordinary, and the announcement of some new locations including a deep test in a new area. Another test will be drilled on the Red Mesa Terrace in La Plata County, where a number of wildcats have been drilled in recent years trying to find the pool believed to exist in that area.

In Wyoming, the Utah Southern Oil Co.'s test on the Garland Dome has reached an interesting stage with a good show of gas in the top of the objective Embar horizon. The California Co. is starting another test on the Snyder Basin Dome in Sublet County, and the Spindletop Syndicate has a 135-bbl. well in its second test southwest of Casper. The Midwest Oil Co. had a 46-bbl. completion in Salt Creek, and several wells in the Oregon Basin Field are making considerable oil while drilling in.

New Mexico

Developments in the Marland Production Co.'s No. 1 Eaves in the SW NE, Section 19-26-37, in Lea County, New Mexico, coupled with the news from the Gibson & Johnson's No. 1 Leek, C SW, Section 3, Block 74, in Winkler County, Texas, caused more excitement than any thing that has happened in that area for a long time. The Leek well is 4½ miles due south of the Eaves well and the latter is 3 miles west and one-half mile south of the Texas Production Co.'s No. 1 Rhodes in the SE NE NW, Section 22-26-37, which was completed last November at 3,216 feet with an initial production of 22,000,000 feet of gas and 120 bbls. of oil. The three wells are linked together in the opening up of what operators now feel convinced is either a new and large pool, or an extension of the Winkler County Pool.

The Leek well was reported making 28,200,000 feet of gas from white lime at 3,071 feet with a rock pressure of 1,350 pounds. Drilling continued and the gas increased to 40,000,000 feet. This was followed by rumors that the well had come in as an oiler with various reports as to what it was doing, the highest figure mentioned being 10,000 bbls. The first lineup of the actual facts was to the effect that at 3,168 feet the well was good for 25,000,000 feet of gas and approximately 6,000 bbls. of oil. The Marland's No. 1 Eaves was reported last week making 8,000,000 feet of dry gas at 2,902-08 feet. Drilling continued to 2,927 feet when more gas was encountered, this time being wet and flowing at the rate of 50,000,000 feet a day. The hole is bottomed 307 feet in the lime and preparations are being made to resume drilling. The pressure was too great to run the tools and it was necessary to fill the hole with mud. It is generally accepted that the Eaves well found the gas at a higher horizon that it was encountered in the Rhoades well, 3 miles to the east, but there is a difference of opinion as to the correlation of the formations, some holding that structurally the two wells are at about the same elevation above sea level, and others expressing the opinion that the Eaves well is 200 feet higher than the Rhoades well.

Almost Impossible to Correlate

It has been found almost impossible to correlate the formations in the wildcats drilled in separate areas in southeastern New Mexico, there being no reliable markers and only the top and base of the salt and the top of the lime to guide the drillers. However, in the area around the Rhoades well a stratum of hard red rock at the top of the lime has been found which appears to be a fairly good marker. This formation indicates that the Marland's Eaves well has not yet reached the horizon in which the Texas Production Co.'s Rhoades well found the oil. The Marland company is well protected with acreage around its well and between that location and the Winkler County test and the Rhoades well is on a permit embracing 2,560 acres. The Midwest Refining Co. has two tracts in the immediate vicinity of these blocks and a much larger tract farther to the northeast. Most of the acreage is held in large tracts except in Section 16-26-37, which is state land and is divided up into small tracts, some of which comprise only 40 acres each. The gas from the Eaves well appears to be coming from a rather peculiar formation. It is composed of anhydrite in which are numerous pockets about the size of ordinary garden peas. These pockets contain sand and all of them appear to be connected though in some instances the connections are made by holes no larger than a pin would make.

The Midwest Refining Co.'s No. 1 State, NE cor., Section 9-19-38, 40 miles north of the Eaves well and near Nadine on what is known as the Hobbs high, is increasing in interest as a result of more shows of gas accompanied this time by shows of oil. The oil made its appearance at 3,180-82 feet. This was followed by another show of gas at 3,210-22 feet. Drilling is in progress at 3,222 feet in lime and anhydrite. The Cecil Bordages' No. 1 Hughes, Section 27-19-38, 4 miles to the south of the Midwest test, is still having bad luck, the bailer being lost again at 3,170 feet at which depth fishing is in progress. The C. E. Reynolds Drilling Co.'s No. 1 Anderson, C SE, Section 29-13-37, in the northern part of

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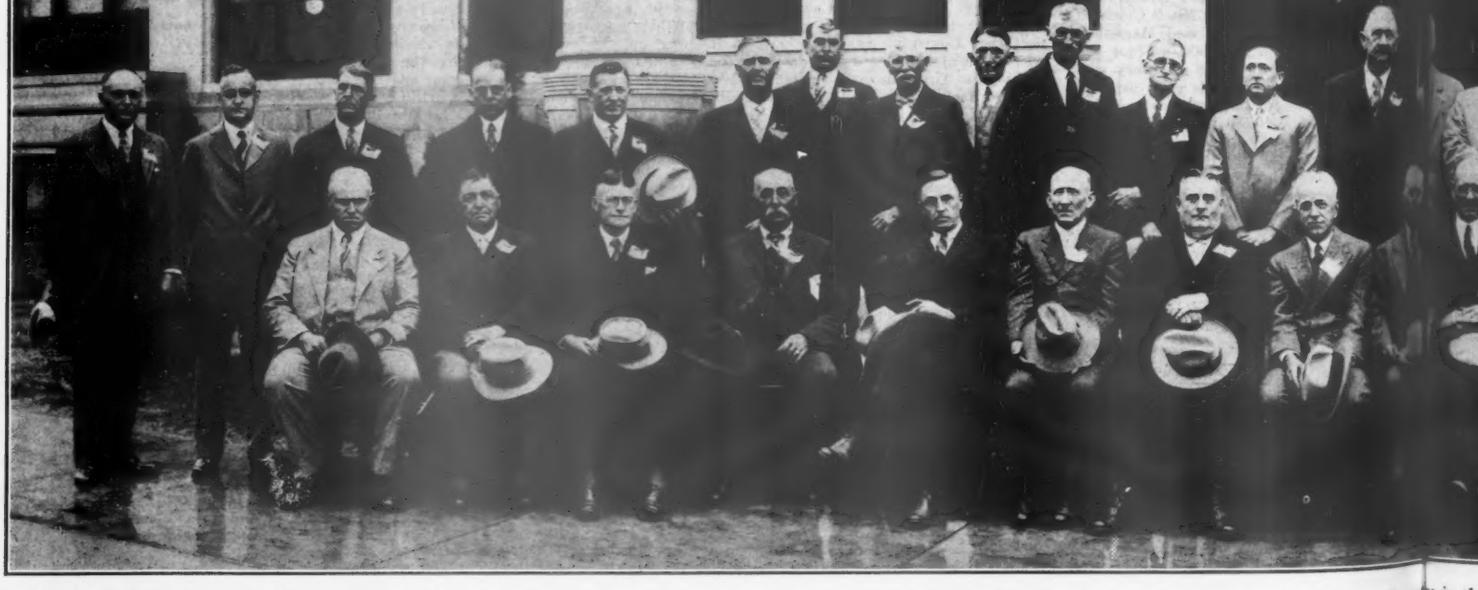

Officials and employes of the company who have given over 20 years' service to one or more companies represented in the Standard Oil Group. Many ... in th... presented by the company. From left to right, standing: D. H. McCarthy, 20 years' service; James Smith, 23; J. F. O'Donnell, 22; John Fertig, 23; J. ... ife, 22; 24; J. A. Hollihan, 24; F. E. Fertig, 24; C. R. Walts, 24; M. M. Mullen, 24; C. E. Inscho, 24; C. E. Vickers, 24; F. S. Gray, 21; J. T. Gray, 24; O. F. Glover, ... V. Hec... Nelson K. Moody, 29; J. O. Wiles, 35; H. W. Peck, 33; C. H. Bates, 34; J. H. Schumaker, 35; J. H. Hennon, 30; Michael Dougherty, 45; W. F. Hannon, 43; H. ... eil, 37; Oles, 36; O. E. Garretson, ... d W. ...

Lea County, commenced spudding April 28 and is drilling at 280 feet. The Gypsy Oil Co.'s No. 1 State, SW cor., Section 34-21-36, is drilling below 800 feet in the red beds, and the Empire Gas & Fuel Co.'s No. 1 State, NE cor. NW, Section 8-21-35, has run the 12½-inch to bottom at 800 feet and will carry same. The Marland Production Co.'s No. 1 Roberts, SW cor., Section 20-23-35, is bailing water at 1,735 feet, and its No. 1 Sholes, NW cor. SW, Section 19-25-37, is drilling at 640 feet. Same company's No. 1 Seideman, SW cor., Section 4-25-36, is drilling at 3,075 feet in salt. Reports from Texas state that Roy McAllister and Henry Hall of Amarillo have purchased the stock of the Mescalero Petroleum Co., which is reported to have a half interest in the Cecil Bordages test and the 160 acres upon which it is located. The Mescalero company started No. 1 Hughes in the NE NW SE, Section 27-19-38, some time ago but it has been shut down for months at 630 feet.

Eddy County

Eddy County had two abandonments this week. Gates, Holman & Rehn's No. 1 Murdock, SW cor. NE, Section 7-21-28, was abandoned at 2,071 feet. It had fresh water at 460 feet and sulphur water at 1,090 1,215, 1,300 and 1,500 feet. There was a show of gas at 1,365 feet. The elevation was 3,185 feet. Snowden & McSweeney's No. 1 Lawrence, NW cor., Section 35-20-29, was drilled to a total depth of 1,738 feet. It topped the salt at 505 feet and found the base at 1,255 feet. It had a show of oil at 1,495-1,500 feet, and hot sulphur water at 1,724-28 feet. The elevation is 3,312 feet. R. D. Compton's No. 1 Vandergriff, NE SE, Section 8-18-27, is drilling below 550 feet, and Hammond and others' No. 1 Miller, SE SW, Section 15-16-25, is cleaning out after a small shot. It was bottomed at 1,826 feet and had 1,200 feet of fluid in the hole when salt water at the bottom was being shut off. Hamilton Petroleum Co.'s No. 1 Billings, C NE, Section 13-19-26, has been completed as an irrigation well. Levers & Carpers' No. 6 State, SW NW, Section 3-18-28, in the Artesia district, is drilling at 2,000 feet, and the Marland Production Co.'s No. 1 Gardner, NE cor. SW, Section 34-23-31, is clearing up a fishing job at 985 feet. It had fresh water at 735-38 feet, and hole full of salt water at 831-35 feet. The Pueblo Oil Co.'s No. 2 Gessert, NE NE NW, Section 1-17-31, is drilling below 600 feet.

Chaves County

In Chaves County, R. T. Neal and others' No. 1 Russell, SW NW NW, Section 21-14-25, commenced spudding May 1, and Arena Oil Co.'s No. 1 Wilkins, NE cor. NW, Section 18-13-31, is shut down at 3,765 feet. It found sulphur water at 3,580 feet, making about four bailersful. McQuigg & McQuigg's No. 1 Neis, C NW, Section 7-5-29, is shut down at 2,237 feet in anhydrite and lime.

In Curry County, the Clovis Oil & Gas Co.'s No. 1 Hoskins, C NE, Section 21-3n-36, was dry at a total depth of 4,002 feet and has been plugged and abandoned.

In De Baca County, the Matador Oil Co.'s No. 1 Woods, SW SW, Section 6-4n-20, is shut down at 230 feet waiting for pipe with hole full of water from 160 and 230 feet. The Navajo Oil Co.'s No. 1 McAdoo, SW cor. NE, Section 16-1s-27, is drilling below 4,240 feet.

In Otero County, Jones, Crowell & Williams' No. 1 Davis, SW cor., Section 5-26s-8e, reported a month ago moving in material, has abandoned location and is moving materials away.

In Valencia County, the Rio Puerto Oil Co.'s No. 1 Ball, Section 13-6n-2w, is drilling at 2,028 feet and carrying the 10-inch casing, and the Acme Development Co.'s No. 1 Santa Fe Railway, Section 27-7n-4w, is bottomed at 2,520 feet and underreaming the 8¼-inch casing.

A test on the Stony Butte structure in southern San Juan County, an area in which considerable interest has been manifested, is at last assured by the announcement of the Midwest Refining Co.'s location in the SW SW, Section 36-22n-14w. The Ohio Oil Co. and the Continental Oil Co. have blocks in that area.

Utah

Utah operations revealed little out of the ordinary for the week. The test nearest to completion is the Midwest Exploration Co.'s No. 1 Early, Section 13-4-6, on the Duchesne structure in the county of that name. It is bottomed at 4,014 feet in brown shale and is running the 6¼-inch casing. It is more than 500 feet below the depth at which it was expected to be completed, but it was decided recently to carry it down to 4,200 feet. The Maude Ellen Oil Co.'s No. 1, Section 28-3s-21, on the Neal Dome, 7 miles north of Vernal in Uinta County, is drilling below 1,000 feet and is about half way down to the objective horizon. The Phillips Petroleum Co.'s No. 1 Schirk, Section 16-27-16, Wayne County, has made but little progress since spudding due to the encountering of a crevice which has given considerable trouble. It is bottomed at around 100 feet. The Utah Southern Oil Co.'s No. 1-A John L. Shafer, Section 36-26-20, Cane Creek Dome, in Grand County, is drilling at 1,080 feet in coarse gray lime, and same company's No. 1 King, Section 13-23-20, Salt Valley structure, has finished rigging and will spud this week. The Western Venture Corp.'s No. 1 Krumvieda, Section 6-5-21, Uinta County, has had some trouble getting a satisfactory seating for its casing at 753 feet, and found it necessary to pull and rerun the string. Same company's No. 1 Spahr, Section 8-5-21, is rigging up new cable at 415 feet. The Continental Oil Co.'s No. 1 Boundary Butte, Section 23-43-22, San Juan County, is fishing at 4,047 feet. The Texas Production Co.'s No. 1 Shipley, Section 5-27-14, Wayne County, is pulling the 8¼-inch casing in an effort to get the tools out of the hole. Total depth is 2,885 feet. The Boulder Knoll Oil & Gas Co.'s No. 1, Section 17-34-25, San Juan County, finished underreaming and landed casing at 2,210 feet and resumed drilling. At 2,245 feet it ran into a gas pocket which blew the tools up the hole and damaged several joints of casing, necessitating pulling same. This test is bottomed in the red beds and is drilling towards the Shinarump expected at 2,500 feet.

Colorado

Christy Payne, president of the Colorado Interstate Gas Co., one of the companies building the Amarillo-Denver gas line, has completed an inspection of the property in company with other officials, and at Colorado Springs gave out an interview containing some interesting figures concerning the field from which the gas is to be taken. He said that what ordinarily would be called a large gas field could be lost in the block of 340,000 acres held in a single unit. A 10,000,000-foot gas well, he said, ordinarily would be considered a large well, but there was one in the Amarillo Field making 164,000,000 feet a day and several others with a capacity of 70,000,000 feet each. The field now has an open flow capacity of 1,000,000,000 feet.

The Florence district in Fremont County continues to show increased activity. Daily average pipe line runs for the week ending May 5 were 1,465 bbls., a new record for more than 25 years. Recent activity in that district is expected to result this summer in some drilling in new localities where conditions are similar. The Florence production does not come from a structure in the ordinary sense, but from broken shale in a syncline surrounded by coal measures. The Trinidad coal basin in southern Colorado is believed to offer some attractive prospecting opportunities as well as several areas in the coal fields in northern Colorado, and at least two areas will be tested this year. Wildcatting of this nature is unusual since most operators look for dome structures that may have trapped the oil, but in these instances the tests are to be drilled in the basins.

A test in the Florence-Canon City district that will be interesting is being started by the Canon Reliance Fuel Co. in the NE NW, Section 16-19-70, in what is known as the Wolf Park district and about 1½ miles southwest of the nearest well in the Canon City Pool. It is in the trend of production in the new pool.

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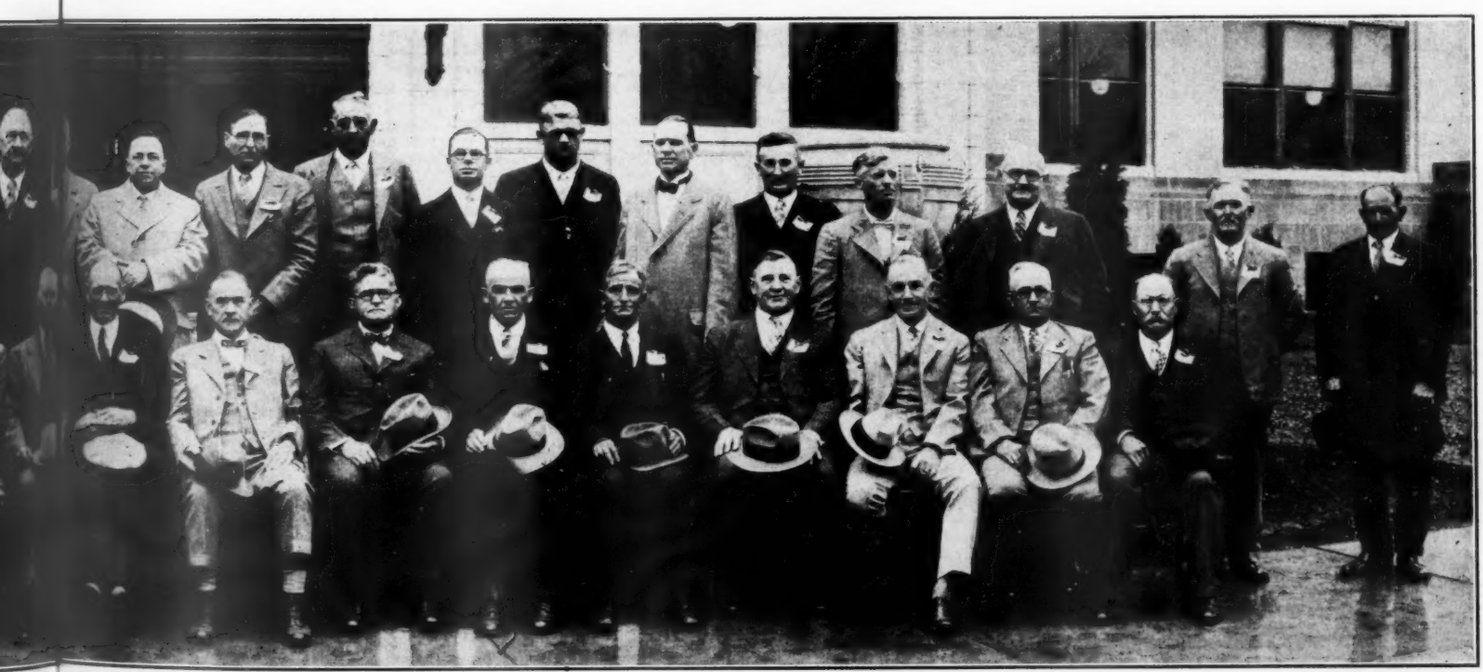
PRAIRIE OIL AND GAS COMPANY



Many of those in the picture have been with the Prairie since it entered the Kansas oil field. In the picture the men are wearing their jeweled 20-year service pins ..., 23; J. A. ...ife, 22; W. E. Clingan, 21; L. A. Buchanan, 22; J. C. Kiddoo, 24; W. E. Pearce, 21; C. B. Goodyear, 21; W. H. Brown, 21; E. E. Tanquary, 23; F. L. Hicks, ... Glover, 2... V. Heckman, 20; C. J. MacFarlane, 23; Charles Martin, 20. Sitting: Monroe Stephens, 29 years' service; W. C. Jenkins, 27; W. H. Love, 28; J. M. Peck, 27; ..., 43; H. ...eil, 37; H. S. Copus, 39; J. W. Smith, 28; A. B. Hookins, 28; J. O. Stewart, 29; J. E. Bryson, 25. Jewel men who were absent from the picture are C. H. ... arretson, 2... and W. W. Pilkington, 47.

New Development in Southern Alberta

Opening of Montana Market for Canadian Gas to Lead to More Drilling. Further Operations in the Skiff Field

By Victor Lauriston
Staff Correspondent, Canadian Fields

CHATHAM, Ontario, May 12.—Important new developments in the border fields of southern Alberta are forecasted by the announcement that a federal permit has been given for the export of natural gas to Montana from the Rogers-Imperial well in LSD 9, Section 29-1-11w4. The permit was granted some days ago to the Range Oil & Gas Co., Ltd., of Calgary, successors to the Canadian Oil & Refining Co., which controls the Rogers-Imperial well and about 12,000 acres of leases on the structure. The location is 33 miles east of Coutts and 4 miles north of the international boundary; and represents a northerly extension of the gas bearing structure recently developed in the Sweetgrass Hills area south of the boundary. The gas will be sold to Montana interests to take care of franchise requirements in Great Falls and other cities. The Rogers-Imperial gasser is rated the largest gas well in the British Empire and one of the world's largest gas producers. It has an open flow of 62,450,000 feet from two sands, and an estimated pipe line flow of at least 30,000,000 feet, the product being a sweet gas and dry. The well was finished at 2,797 feet, the second sand being encountered at around 2,787 feet.

Shut In for Several Years

The Rogers-Imperial gasser was drilled a number of years ago by the Canadian Oil & Refining Co., organized by Mark Rogers, George B. McKay and other Lethbridge men. Imperial Oil, Ltd. took an interest in the test, but it is understood that, failing to secure oil, the finished well was taken over by the Rogers interests. Gas was met in large quantities in two sands, but no oil. No market was available in Alberta for the huge production, so the well has remained shut in for several years. It is understood that Montana interests have been anxious to get the gas, but some difficulty was experienced in securing permission to export the production. Application for a permit was made over a year ago. Some time ago the original Canadian Oil & Refining Co. was reorganized, and the Range Oil & Gas Co. formed to take over the well and leases. Recently the Range Oil & Gas Co. applied to the Alberta Public Utilities Commission for common carrier and common purchaser rights over the gas pipe lines of the Canadian Western Natural Gas Co. in order to market its production. In this application it was pointed out that a number of wells were being drilled on the United States end of the structure, which extends across the international boundary, and that a result of this development would be that eventually the gas would all be drawn from the Canadian end of the structure with benefit to the United States operators alone. The federal permit to export the gas was granted on the ground that the structure is an international one, and that export is necessary to enable Canadian operators to share in the profits of development. The gas will be used primarily to supply Great Falls, but may ultimately be piped to Anaconda, Butte and Helena. It is understood that the Anaconda Copper Mining Co., which some years ago drilled for gas on the Montana side, will take 6,000,000 feet a day for its Great Falls smelter alone. The Alberta provincial authorities are understood to have given their approval to the export project; the immediate and future needs of Alberta being, it is understood, amply protected by the enormous gas production of the Turner Valley and other fields.

Gas from the Kevin-Sunburst Field was first delivered to Great Falls by the Great Falls Gas Co. on May 2; but the prospective addition of the Alberta production gives the city an assured supply for all purposes.

The Rogers-Imperial interests are understood to have spent $250,000 on the development of their leases. The big gasser has been capped since 1925. Imperial Oil, Ltd. had considerable acreage adjacent to the Range Oil & Gas Co. holdings. The Range Oil & Gas Co. is planning to drill two additional tests on the Rogers-Imperial structure this season. On the adjacent Beaver Dome structure, Madison Oils, Lt. of Calgary has already located a test in LSD 8, Section 24-2-11w4; It is now announced that, as a result of the opening of a Montana market for the gas, this company will drill a second test this year. Madison Oils, Ltd. is moving in derrick timbers and machinery for its No. 1 test. There is a fair possibility that further drilling on this structure will develop oil production, as the old Beaver well, near which the Madison No. 1 is located, got both wet gas production and oil showings some years ago.

Skiff Field

In the Skiff Field, southern Alberta, Imperial-Devenish's No. 2, N half Section 11-5-14w4, has started work on its camp buildings and is moving a combination rotary standard outfit from the Skiff railway yards to the site. The location is 2½ miles southeast of the Devenish No. 1 discovery well in LSD 5, Section 27-5-14w4.

Model Oils, Ltd. of Calgary is reported to have signed an agreement with interests holding acreage in the northwest end of the Skiff Field, under which a test will be drilled this season. The location is to be made this month, and drilling will likely start in June. Alberta Pacific Consolidated, Ltd. of Calgary which holds some adjacent acreage will do some core drilling this spring preparatory to making a location for a deep test of its holdings. Lethbridge interests are reported to have leased 2,000 acres south of Conrad, in what is thought to be an extension of the Skiff Field.

In the Warner district, Gas Production & Transportation's No. 1, NE Section 21-4-18w4, is reported drilling around 3,400 feet and close to the potential producing sand.

Pondera Field

On the Montana side, it is reported that the California Petroleum Co. has purchased a 30 per cent interest in 4,000 acres of leases held by the Treasurebelt Oil Co. in the Pondera Field. The Treasurebelt company recently took over this 30 per cent as assignee of the old Utah Western Oil Co., the pioneer operator in the Pondera Field. The remaining 70 per cent was acquired by the Claggett Oil Co. last summer from the Utah Western company on an operating agreement. The California Petroleum Co. has been negotiating for this 70 per cent interest, but the deal is understood to be hanging fire; the California Petroleum will, it is understood, start development work as soon as the deal is closed.

Pincher Creek

In the Pincher Creek district, southwestern Alberta, Alberta Gas & Fuel Co.'s No. 1 Doherty in Section 34-2-29w4, near Hillspring, is reported down 3,150 feet, with an 8¼-inch casing. The company is a subsidiary of the Henry L. Doherty Co. and Linn M. Farish is in charge of the Pincher Creek operations. The Doherty interests are also building camp for their No. 1 Castle test on the S. Lunn farm, 4½ miles west of Pincher Creek. This test will likely spud in before July 1. The Pincher Creek structure was first mapped by the Geological Survey of Canada, and later the Henry L. Doherty Co. geological staff examined it very carefully. It is a southerly continuation of the foothill belt which has already proven productive in the Turner Valley Field. Geological and drilling conditions here are considered closely similar to those in the Turner Valley. It looks like a deep drilling proposition, and the Doherty interests are, it is understood, planning to carry both their tests to 6,000 feet if necessary.

The Raymond, Alberta, board of trade has named a committee consisting of Emil Weed, L. D. King, Ray Knight and W. G. Meeks to secure geological information on the possibility of oil and gas production in the vicinity of Raymond. Mr. Weed, who is familiar with the Pennsylvania, Indiana and Oklahoma fields, states that indications are strongly favorable. If an encouraging geological report is secured a local company will be organized to carry on development work.

Turner Valley

In the Turner Valley Field, Royalite Oil Co.'s No. 8, LSD 15, Section 12-20-3w5, running on one separator in the last week of April made 1,355 bbls. of crude naphtha, an average of 193 bbls. a day. The production is from the deep lime. This production will be considerably increased when a second separator is installed and the crude naphtha recovery from the wet gas is more nearly complete. Dalhousie Oil Co.'s No. 1, LSD 4, Section 18-20-2w5, made an average of 232 bbls. a day till the end of April, and Royalite's No. 4 gusher, LSD 12, Section 7-20-2w5, averaged 589 bbls. a day in April.

Official production figures for April show the following totals for the various wells delivering crude naphtha and crude oil to the Royalite Oil Co. pipe line:

	Month	Dly. Av.
Crude Naphtha Producers		
Royalite Oil Co.'s No. 4	17,681	589
Royalite Oil Co.'s No. 7	1,603	53
Royalite's No. 8 (7 days) ..	1,355	193
Royalite's Nos. 1 and 2 (drips)	57	2
Dalhousie Oil Co.'s No. 1 ..	6,958	232
McLeod Oil Co.'s Nos. 1 and 2	4,027	134
Illinois Alberta's No. 1	2,110	70
Crude Oil Producers		
McLeod Oil Co.'s No. 3	110	3.7
Dalhousie Oil Co.'s No. 5 ..	2,021	67.4
Home Oil Co.'s No. 1	1,023	34.1
Foothills' No. 1 (part month)	380	38
Royalite Oil Co.'s No. 10 ...	400	13.3

The crude naphtha producers are beginning to experience their seasonal decline in production, the output falling off a little in warm weather and increasing in cold weather.

Royalite Operations

Royalite Oil Co.'s No. 11, LSD 10, Section 12-20-3w5, recently encountered a small show of oil in the Blairmore-Dakota horizon, but is being deepened without a production test. It is now drilling at 2,470 feet. Royalite's No. 6, LSD 16, Section 31-10-2w5, is standing

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MUSKEGON BEING DRILLED UP; ONE NEW LOCATION DURING WEEK

By Special Correspondent

MUSKEGON, Mich., May 12. — Although it is now the general impression among operators in the Muskegon Township Field that it will be but a matter of time until all of the profitable acreage over the present pool will have been drilled up, none of the operating companies has yet demonstrated a willingness to drill in wildcat territory in some other part of the county.

Only one new location was announced during the week and that will be the site for A. S. Cochran's No. 1 Seiner to be drilled by the Ohio contractor about 600 feet directly west of the 20-bbl. pumper which he completed this week as his No. 1 Taggart well in the SE SE Section 5.

Mr. Cochran sold one-half of his working interest in the Taggart well for a consideration reported at $4,000. He owned but a three-fourth working interest in the well as one-eighth interest is held by A. R. Taggart and Ethel McDermed as the landowners and a similar interest is held by J. J. Fagan & Co., original lessees.

Tools are now being moved to the new location and drilling will be started immediately. The new well will be directly north of the two wells of the Dixie Oil Co., one completed as an 80-bbl. producer and the other to be started within a short time on a 40-acre tract owned by Fred W. Figge. The Dixie wells are No. 1 and No. 2 Figge-B wells in the NW NE Section 8.

The Lima Oil Corp. has begun to move across the Cedar Creek branch of the Muskegon River for two new wells for which locations were announced some time ago. They will be No. 2 Margaret Figge and No. 1 Haight. The former will be in the SE NW Section 9 and the latter in the NE NW Section 9.

These are the only two other new locations so far announced upon which wells already are drilling or have been completed in the Muskegon Township Field. Several operators, including the Muskegon Oil Corp., its subsidiaries and the Dixie Oil Co., subsidiary of the Standard Oil Co. of Indiana, have announced they will do some wildcatting in other parts of the county this summer, but no one has actually made any such move.

May Be 100-Bbl. Well

The Joliet-Morris Development Co.'s No. 1 Kooi, SW NE Section 8, had a hole full of oil today after having been drilled to a depth of 1,670 feet, but there was insufficient gas flow to raise the oil into the auxiliary tanks. The well made 30 bbls. overnight, and gives indication of becoming at least a 100-bbl. producer when completed. It will be drilled deeper in an effort to make it flow into the tanks.

Indications are that the Dixie Oil Co. will get a duster in its No. 1 Becker well. The well was drilling at 1,685 feet and had encountered but one small show of oil at 1,678 feet. This places it more than 30 feet low on structure and indicates it will be but a small well if it comes in at all. It lies about half way between the discovery well of the Muskegon Oil Corp., and the dry hole drilled on the adjoining Becker property, on the north by the Citizens Petroleum Co., a subsidiary of the local corporation.

Reed Oil Co.'s No. 1 Torrent, NE NW Section 17, was abandoned as a failure, increasing the list of unsuccessful wells

(Continued on Page 132)

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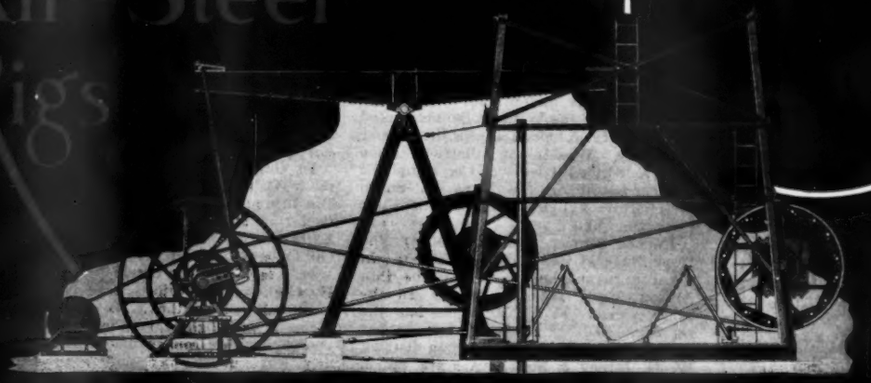

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Three Fair Completions in the East

One in Monroe County, Ohio, Making 75 Bbls. the First 24 Hours Is Largest Shallow Sand Well This Year

By D. S. Wakenight
Staff Correspondent, Eastern Fields

PITTSBURGH, Pa., May 14.—Fewer completions and less new production was the result of development work in the eastern fields during the past week. The wells completed with a higher production than the average are located in defined sections and only a few of them located in the deep sand territory in southeast Ohio. One of the three fair completions is a shallow sand producer and is the largest completed since the first of the year. It is the Sylvania Producing Co.'s No. 9 on the James R. Kinsey farm, Section 29, Bethel Township, Monroe County, Ohio. It produced 75 bbls. the first 24 hours after drilled into the Squaw sand.

Southeast Ohio

In Lot 13, Cambridge Township, Guernsey County, the Preston Oil Co. completed in the Big Lime formation a second test on the P. A. Curran farm. It produced 75 bbls. the first 24 hours after drilled into the pay at a total depth of 3,495 feet. Guernsey County, the most active a year and a half ago, has at present very little work under way and starting. There are but five wells drilling in the entire county. It is the most expensive and deepest territory in southeast Ohio.

The development in Harrison Township, Perry County, is still quite active, but the indications are that the rich little pool has been at the peak of its production.

In Washington Township, Hocking County, Berlin and others have completed a test on the N. F. Riggs farm It is a duster in the Clinton sand. In the same township, the Riggs Oil Co. has a rig up for a second test on the C. W. Riggs farm. The Twin Hill Oil & Gas Co. is starting to drill on the S. Walter Lane farm.

In Falls Gore Township, Hocking County, the Griffin Producing Co. on the A. Mohler farm has a rig. In Section 36, Monday Creek Township, Jesse Tucker and others are due in the Clinton sand at a test on the William Lawson farm.

In Section 10, Monroe Township, Holmes County, the Empire Gas & Fuel Co.'s second test on the M. G. Bird farm has a light show of gas but has been abandoned. In Killbuck Township, Section 13, the Kemrow Co.'s second test on the Charles Shuy farm is a gasser in the Clinton sand

In Section 34, Lodi Township, Athens County, the Farmers Oil & Gas Co. has a gasser in the Cow Run sand at a test on the R. E. Wilson farm. In Lot 10, Athens Township, Gross & Frebeult & Co. have a very light pumper in the Berea grit at No. 6 on the David Higgins farm. In Salisbury Township, Meigs County, the Coal Hollow Oil & Gas Co. has a light pumper in the Berea grit at No. 5 on the R. T. and R. H. Burdett farm. In the same township, Wheeler & Griffith have the same kind of a pumper on the J. R. Wells farm.

In the NE of Section 7, Muskingum Township, Muskingum County, the Ohio Oil Co. has completed a test on the B. F. Curran farm. It is a duster in the Clinton sand at a total depth of 3,398 feet.

West Virginia

On Meathouse Fork, New Milton district, Doddridge County, West Virginia, Claude Maxwell has drilled a test on the Seventh Day Baptist Church parsonage lot through the Big Injun sand and it is a light gasser in that formation.

In Sheridan district, Lincoln County, the Empire State Gas Co. has completed a Berea grit gasser at a test on the Lyle Butcher farm. In Scott district, Boone County, the United Fuel Gas Co. has a Big Injun sand gasser at No. 17 on the Horse Creek tract.

In Hackers Creek district, Lewis County, the J. A. Anglin Oil & Gas Co. has a gasser in the fifth sand at a test on the E. M. Fleming farm. In Grant district, Ritchie County, the Astron Oil Co.'s No. 9 on the Strasburg Realty Co.'s property is a gasser in the Big Injun sand.

In Grant district, Pleasants County, George Pickens and others completed a second test on the William Bennett heirs' farm good for 5 bbls a day in the Keener sand In Washington district, same county, Samuel Glenn & Co. completed a second test on the Myra K. Smith farm. It is a light gasser in the First Cow Run sand.

In Lee district, Calhoun County, the Hope Natural Gas Co. has completed in the Big Injun sand a test on the Don Allison farm. It is a duster. In the same district, F. F. McIntosh has the rig completed for a second test on the Margaret Nox farm. In Sherman district, W. G. Dailey & Son have a rig up on the Charles Robinson farm.

Boone County

In Washington district, Boone County, the Owens Bottle & Machine Co. has completed a second test on the E. S. Miller farm. It is a fair gasser in the Big Injun sand. In Sherman district, same county, the Shank Land Co. has a similar gasser at No. 4 on the Shank Land Co.'s property. In Crook district, the United Fuel Gas Co. is drilling tests on the Louisa F. Chew & Co. and Courtney company's farms. In Washington district, the Hope Natural Gas Co.'s test on the A. C. Canterbury farm is a duster.

Declined Rapidly

In Stonewall district, Wayne County, where Meabon & Huffman some weeks ago completed in the Big Lime formation a test on the Wayne Osborne farm with an initial production of 35 bbls., the well has not showed very good staying qualities. In the past two and more years almost a continuous effort has been made to bring Wayne County to the front. In view of the amount of money expended and the efforts made the result has not been satisfactory. In Stonewall Township, the Consolidated Gas Co. has started to drill a test on the Dicie Jarrell farm and has a rig up for a test on the Johnson Queen farm.

In Geary district, Roane County, the G. & C. Oil Co. has completed in the Big Injun sand a test on the O. D. Stockly farm. It is a light pumper and is 1,700 feet southwest of the South Penn Oil Co.'s No. 54 on the same farm.

In Clay district, Ritchie County, H. H. Coghwill and others have completed a second test on the J. L. McCullough farm. It is a light gasser in the Big Injun sand. This county has a little more new work under way than for several months.

Cabell County

In Grant district, Cabell County, the Aetna Oil & Gas Co. has completed in the Berea grit a test on the S. J. Reynolds farm. It is a light gasser. In the same district, the United Fuel Gas Co. had the same luck at a test on the Mary Davis farm. The West Virginia Corp. is due in the sand at a test on the A. Childers farm.

In Hackers Creek district, Lewis County, the McCall Drilling Co. has now drilled a test on the S. D. Bailey lot through the Benson sand to a depth of 4,352 feet. It is a light gasser. In Sheridan district, Calhoun County, Bart Crowley's test on the James Bryne farm has a little oil and gas in the Big Injun sand.

Braxton County

In Otter district, Braxton County, J. F. Pauley & Co.'s second test on the Harry Clowser farm is a gasser in the Big Injun sand. In Mannington district, Marion County, the Carnegie Natural Gas Co. has completed a Fourth sand gasser at a test on the W. Grubb farm.

In Grant district, Ritchie County, the Delta Oil Co. has drilled a second test on the J. W. Goff farm through the Mitchell sand and found nothing. It is now drilling to the lower sands. The same company has the rig completed for a test on the Tennant heirs' farm. In Murphy district, the Hope Construction & Refining Co. has a gasser in the Big Injun sand at No. 3 on the J. L. Hill farm. J. F. Deem & Co.'s test on the Baker farm is a duster in the same formation.

In Grant district, Pleasants County, Swingle Brothers' second test on the Fulton Holdren farm is a duster in the salt sand. In Washington district, Smith, Riggs & Brown have a light pumper at No. 4 on the S. W. Smith farm. On Spring Creek, Union district, Ritchie County, the Carnegie Natural Gas Co. has the rig completed for a second test on the Bertha Daugherty farm.

Drilling Tests

In Duval district, Lincoln County, C. C. Wolfe is drilling a test on the Malinda Meadows farm. In Carroll district, L. B. Sweetland has started to drill No. 32 on his own farm. In Sheridan district, the Empire State Gas Co. is due on the Lyle Butcher farm.

In Barboursville district, Cabell County, the United Fuel Gas Co. is moving the rig on the Anna M. Stroud farm. In the same district, the same company has the road completed to a location on the John Consard & Co. farm. The Kentucky-West Virginia Gas Co. has rigged up on the Thomas McAllister farm. In Grant district, the United Fuel Gas Co. has made a location on the Robert Porter farm.

One mile west of Otto station, Smithfield district, Roane County, the Ohio Valley Gas Co. has the rig completed and started to drill at a second test on the Huffman-Oppenheimer farm. In Carroll district, Lincoln County, the Cambridge Gas Co. has started to drill on the W. E. Madden heirs' farm. In the same district, Wysong & Jaynes have made a location on the Josephine Stewart farm.

In Fairmont district, Marion County, the Owens Bottle & Machine Co. has started to drill on the Scott Arnett farm. In Geary district, Roane County, the United Fuel Gas Co. has started to drill on the F. P. and L. B. Parker farm. In Spencer district, the Ohio Valley Gas Co. has started to build a rig on the R. M. Jennings farm. On Lambs Run, Murphy district, Ritchie County, the Mid-Penn Oil Co. is drilling a second test on the E. Tibbs farm.

On Piltzer Run of Big Buffalo Creek, Lincoln district, Marion County, the Mack Bell Oil & Gas Co. has started to drill a test on the J. F. Pitzer farm. On Big Root Creek, Sheridan district, Calhoun County, W. B. Bickel has the rig completed for a test on the Marshall heirs' farm. In Hackers Creek district, Lewis County, the Anglin Gas Co. has drilled a test on the E. M. Fleming farm to a total depth of 4,468 feet and shut down for orders. In Glenville district,

(Continued on Page 120)

UPWARD TREND IN GASOLINE TANK WAGON PRICES CONTINUES

The average gasoline tank wagon price continues to advance as shown by the May 1 prices in The Oil and Gas Journal's 50 representative cities. On May 1 it was 15.02 cents, compared with 14.81 cents on the first of the previous month. Since January 1, the tank wagon average price has been increased slightly more than three-quarters of a cent per gallon and while this is small compared to the advance it will have to make in order to bring the average price back to normal, the trend is upward and the greater consuming season is immediately ahead.

During April there was a very noticeable strengthening of the retail market structure throughout the Mid-Western States, particularly in the territory covered by the Standard Oil Co of Indiana. This has been brought about by the gradual elimination of price cutting in the more competitive centers. Although this change is coming about slowly, there has been no apparent resumption of price cutting after the higher prices have been established and the better retail market structure is reviewed as firm and there is promise of this movement continuing. This strengthening, coming at a time when consumption is increasing, presents a more optimistic outlook for the marketing division of the industry for the year.

The advance in the refinery prices is reducing the margin to the marketer in many localities and this is the cause for the establishment of a more stable retail market through the elimination of price cutting. It appears to be the plan of many refining organizations having their own distribution to discourage a wide margin between the refinery price and

(Continued on Page 126)

AVERAGE TANK WAGON PRICE IN 50 CITIES

(Exclusive of tax.)

May 1, 1926	18.487
June 1	19 607
July 1	19.697
August 1	19.697
September 1	19.587
October 1	19.167
November 1	18.187
December 1	17 607
January 1, 1927	17.567
February 1	17.469
March 1	17.007
April 1	16.160
May 1	15.320
June 1	14.720
July 1	14.86
August 1	14.89
September 1	14.62
October 1	14.39
November 1	14.32
December 1	14.21
January 1, 1928	14 29
February 1	14.33
March 1	14.71
April 1	14.81
May 1	15.02

Four Reliable Products for the Industry

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RUE-NEK

OUR experience in the designing and building of machinery—over a period of fifty years—has entered into the construction of the RUE-NEK Pumping Unit. The multiple crank disc, service davit and counterweight mechanism are some of the new and unusual features incorporated in its design, and Link-Belt Herringbone Gears (Sykes tooth form) are used throughout.

Send for Book No. 780; also list of installations.

Roller Chain

FOR years Link-Belt "RC" Class Roller Chain has demonstrated its durability in all kinds of severe service. It is standard equipment on some of the largest auto trucks, and this service has proved that the chain can stand shocks and strains without impairing its efficiency.

Send for a copy of Link-Belt Roller Chain Data Book No. 257.

Silent Chain

FOR the higher speed drive, as from motor to the first countershaft, the Link-Belt Silent Chain Drive is winning increased recognition.

Link-Belt Silent Chain is Flexible as a Belt—Positive as a Gear—More Efficient Than Either.

It is made in sizes from ¼ to 1000 H. P. and over. Send for a copy of the Link-Belt Silent Chain Drive Data Book No. 125.

Rotary Chain

THE first and most widely known chains in the industry are without doubt the "SS" Class (SS-40 and SS-124) Rotary Drilling Chains, and their corresponding "Plus" Chains (SS-40+ and SS-124+). These Chains have brought a high degree of efficiency to the rotary drilling rig.

This double arrow >——< trade mark identifies Genuine Link-Belt Chains. Carried in stock by stores in every field.

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Dependable Power
for all Production Jobs

The outstanding popularity of the TICO Gas Engine is based on its remarkable all-around dependability for drilling, swabbing, pumping, pulling casing and every other production job.

The TICO is the easiest starting of all 2-cycle gas engines. Extreme flexibility —with instant response and pick-up— promote efficiency in drilling. The TICO develops *double* its rated horsepower in sustained pulls. Rugged construction and simplicity of design give long life with low upkeep cost. Available in 25 to 55 H.P. sizes.

The ACME Reversible Clutch with which Tico's are equipped is famous for exceptional dependability. Hollow spindle and flood lubrication prevent overheating. Special heavy duty model is *Timken Bearing Equipped.*

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69 Thomas Block, Calgary, Alberta, Canada

CONTINENTAL

One Kentucky Area Makes 7,500 Bbls.

Tri-County Field, Hancock, Ohio and Daviess, Expected to Reach 10,000 Bbls. Daily Shortly. Good Ambrose Well

By Whit
Staff Correspondent, Kentucky-Tennessee

OWENSBORO, Ky., May 12. — The feature well of the week in the Kentucky Field was developed in the eastern portion of the Ambrose Pool, in Ohio County, when James C. Ellis drilled in No. 1 on the Mrs. Daniels 50-acre lease, for the Griffith Mineral Co., which opened up a real producer at a depth of 622 feet, making it one of the best wells found in the pool since the Daly-Lowman big well on the Bob Hamilton 100 acres, and adjoins the 176-acre lease of the Cumberland Petroleum Co., on the north portion of the Bob Hamilton farm. The well is reported better than 200 bbls. and caused unusual excitement. The area in which this well is located is some distance to the east of the Ambrose Pool proper and directly north of Hartford, the county seat of Ohio County.

Production is increasing at a rapid rate in the area known as the Tri-County Field of Hancock, Ohio and Daviess Counties, having reached about 7,500 bbls. daily, the largest in the history of the field and operators predict that the next few weeks will bring it close to 10,000 bbls. daily. There are a large number of wells drilling in close to big production in both Ohio and Daviess Counties and if they show up anywhere near what the recent completions have done the production should go above the daily mark mentioned. The wells show remarkably fine staying qualities, which is something out of the ordinary for shallow holes, especially those in the rich spots in Ohio County like the Ambrose Pool and its extensions, to say nothing of the Brown Pool and Hayden Pool, in Daviess County which are also rich but nearly twice the depth of those in Ohio County. If the good results of the drill continue in the western division, the production will make a much better showing than the eastern division with its thousands of pumpers, comprising the famous Sinking Creek Field of Lee County, as well as Estill, Owsley, Wolfe, Wayne, Lawrence, Johnson, Magoffin and other counties to the far east.

Another very interesting well is that of the Cumberland Petroleum Co., which found 28 feet of pay sand in No. 9 on the north end of the Bob Hamilton 176 acres, in the eastern extension to the Ambrose Pool, quite a distance to the north of the eight producing wells on the farm. This well was drilled to test the north end of the lease. This well developing a good producer proves the Hamilton farm as one of the good leases in Ohio County, with an initial production of 150 bbls. Near the new well Hugh Randall drilled a nice gas well on another lease, which indicated the pool was swerving from its indicated direction.

Ellis Ships Oil

The Producers Pipe Line Co., headed by James C. Ellis, of Owensboro, shipped its first 5,000-bbl. tanker of oil on May 3 by river, loading it at its pipe line dock near the Glenmore Distillery Co. for the Louisville Refining Co. The tankers will move at regular intervals on the river from Owensboro, the new pipe line from Taffy, in Ohio County, where the company has its pumping and gathering station and tanks, having been completed and has been gathering crude oil from the northern Ohio County Field for more than a week. The oil is being pumped the 22-mile stretch from Taffy to the two 37,500-bbl. storage tanks near the Glenmore Switch, a short distance south of Federal Highway No. 60, where it is drawn off by gravity into the river tankers.

The Illinois Pipe Line Co. is also shipping oil through river tankers to the Aetna Refining Co. at Louisville, as well as sending thousands of barrels through its main line to Illinois points at Robinson and Lawrenceville.

Gets Big Gasser

One of the largest gas producers known to be drilled in western Kentucky is that drilled by Craig & Lowrie, near Sebree, in Webster County, west of the Ohio and Daviess County Fields. The first sand in this wildcat was struck at 491 feet, and was 15 feet in thickness; the second sand was struck at 550 feet where the big gas volume was found, estimated at around 5,000,000 feet.

No completions were reported from the eastern division of Kentucky.

Week's Work

A summary of the week's work in the Kentucky Field shows 23 completions, 16 producers with an initial production of 1,128 bbls., 7 dry holes and no gas wells.

County—	Comp.	Wells	Prod.	Dry	Gas
Ohio	15	12	843	3	0
Daviess	5	3	250	2	0
Allen	2	0	0	2	0
Hancock	1	1	35	0	0
Total	23	16	1,128	7	0
Last week	25	14	910	9	2
Difference	2	2	218	2	2

Western Kentucky

With the good weather prevailing a large increase in development work is noticeable over a large area of western Kentucky, and new drilling outfits are being shipped into the fields daily, most of them being unloaded at Owensboro, the nearest railroad point to the active work at this time. Hartford, the main headquarters of Ohio County, is getting its share of the activity, as is Whitesville in Daviess County and Pellville in Hancock County.

Ohio County

Renewed interest is being taken in the search for another shallow pool in the vicinity of Dundee, Ohio County, east of the Sunnydale Field. Production from the older wells in Sunnydale Field is holding up remarkably considering the shallow depth at which the Jett sand is found there. Many oldtime operators as well as several high-class geologists hold to the opinion that a number of pools similar to Sunnydale and Ambrose are likely to be uncovered during the coming summer east and north of Sunnydale.

Among the individuals and firms doing actual development work in the Dundee region is M. Porter Evans, of Oklahoma, who was reared in the vicinity of Narrows, Ky. He has already drilled a number of scattered tests east of Dundee and met with such encouragement he is planning several more tests in the locality this season. His next venture will be on the Lon Ralph 185-acre farm about a mile north and a little east of Sunnydale. T. M. Hunt, of Bowling Green, Ky., associated with George L. Kerr, of Olean, N. Y., both operators of wide experience, have recently drilled two tests near Dundee. The result of these two wells has been satisfactory to them in revealing geological and other data of a favorable character. They staked another location for a test on the S. P. Fenn farm, about a mile south and slightly east of Dundee. Contractor J. N. Smith has taken the drilling contract and already started work.

E. C. Arnold, geologist, acting as trustee, has staked a location for a test on the Cooperage farm about three-quarters of a mile north and slightly east of Dundee. Contractor Rice has started work on this test. About 2½ miles east of Dundee, the Lincoln Oil Corp. is starting a number of test holes. The first well is about due in the Jett sand and would have reached it were it not for a fishing job for tools lost in the hole. This test is on the Fentress farm near where good oil indications were found in tests some years ago.

The Ohio Oil Co. set a string of 680 feet of casing, got the sand from 697 to 709 feet and went to a total depth of 719 feet at No. 3 on the J. H. Davis 125-acre farm, in the western portion of the Ambrose Pool and southeast of the Union Grove Church, and shot with 60 quarts, the well showing 40 bbls. under pump. Same company's No. 1 on the Rosette Taylor 26 acres, in the Midkiff Pool, northeast of the Ambrose Pool and near the hamlet of Ralph, got the sand from 552 to 572 feet and went to a total depth of 574 and shot with 100 quarts, with an initial production of 55 bbls.

James C. Ellis brought in No. 4 on the J. T. Hoagland farm, after passing through 57 feet of sand, the well doing 60 bbls. Same party drilled in No. 1 on the Mrs. Daniels 50 acres, in the eastern part of the Ambrose Pool, and east of Mount Moriah Church, estimated at better than 200 bbls. at a depth of 622 feet, also drilling No. 5 on the Jane Daniels 30 acres, adjoining the Bob Hamilton farm.

Cumberland Petroleum Co.'s No. 9 on the north end of the north 176 acres of the Bob Hamilton farm struck 28 feet of good sand and estimated at 150 bbls. initial production, with No. 10 drilling.

Robbins and others found a dry hole in No. 1 on the J. B. Ashby farm, in the Midkiff Pool, at 815 feet.

Young & Lee set a string of 657 feet of casing, got sand at from 668 to 692 feet and went to a total depth of 693 feet in No. 4 on the Ollie Ezell 80 acres between the Ambrose Pool proper and Bell's Run, and after a 160-quart shot produced 50 bbls. the first 24 hours.

Daugherty and others' No. 7 Hill Rhodes' 150 acres in the Ambrose Pool got sand from 678 to 714 feet and went to a total depth of 724 feet, shooting with 120 quarts, resulting in an initial producer of 150 bbls. No 8 same farm set a string of casing at 718 feet, sand from 718 to 760 feet and went 1 foot below the sand and shot with 100 quarts, showing an initial production of but 10 bbls. No. 9, same farm, is under way.

Hunt & Kerr's No. 1 Ollie Duff farm is reported showing for a 10-bbl pumper. Hartman, Sargent and others' test on the John Atherton farm, in western Ohio County, near the town of Nuckols, is reported good for 20 bbls. initial.

Wood Oil Co.'s No. 29 on the Mary J. Elmore farm, in the heart of the Ambrose Pool, found 28 feet of pay sand at a depth of 622 feet, and showing for 100 bbls. initial production.

Thomas Hunt and others are reported to have found a dry hole at a test on the Moseley heirs farm in the Kelly Pool. Daley & Lowman have one of the same kind in a test on the Baker Brothers 82 acres, in the Sunnydale Field. Sand in this well was found at from 436 to 450 feet, but failed to show worthwhile production.

White Plains Oil & Gas Co.'s No. 6 on the Howard heirs 246 acres, in the Mid-

(Continued on Page 123)

SHELBY COUNTY, OHIO, PRODUCER ENCOURAGES MORE TEST WORK

By Whit
Staff Correspondent, Central West Fields

FINDLAY, Ohio, May 12. — There were 15 completions reported for the week in the Central West fields, comprising Lima, Indiana, Illinois and Central Ohio, the only division failing to report new wells being the Central Ohio Field. Out of the number drilled in the three other divisions, 8 were dry holes, 2 gas wells, and 5 producing wells with an initial of 93 bbls., which is rather discouraging to operators. Three old wells were abandoned, two in Indiana and one in Illinois.

The feature find in the old Lima Field of northwestern Ohio was a test drilled by Henry Ernest, 1,250 feet from the south line and 275 feet from the west line of his own farm, in the southwest quarter of Section 10, McLean Township, Shelby County. The well topped the sand at 1,272 feet and oil pay at 40 feet in the sand, the well having an initial production of 35 bbls.. This well should encourage more test work in that part of the field, being in advance of production to the south of the old original producing areas.

Northeast of Lima, in Bath Township, Allen County, H. F. Kelly and others' No. 3 well, 250 feet from the south line and 20 feet from the east line of the J. M. Miller farm, in the southeast quarter of Section 11, pumped an initial of 25 bbls. Top of sand in this well was found at 1,318 feet and drilled 50 feet in the sand to a total depth of 1,368 feet.

The third completion in the Lima Field was a dry hole drilled by the Farmers Oil Co., in a test 600 feet from the north line and 275 feet from the east line of the George Headapohl farm, in the southwest quarter of Section 18, Pusheta Township, Auglaize County. Sand was found at 1,203 feet and drilled to a total depth of 1,271 feet, or 68 feet in the sand where a heavy dose of salt water was encountered.

Indiana

One of the feature finds in the Indiana fields was made by J. E. Bauers and others, or known as the Texanna Oil Co., in a test in the northwest corner of the K. L. Crackel farm, in the southwest quarter of Section 6, Washington Township, Gibson County, in the Mount Olympus Field, which struck top of sand at 1,561 feet and at 10½ feet in the sand showed an initial 24 hours' pumping of 30 bbls. and will make a 15-bbl. pumper. Mann & Huber drilled a test in the northwest corner of the Ed Page farm, in the northeast quarter of Section 13, which tapped a gas sand at from 500 to 534 feet, showing a volume of 300,000 feet in the same township. In Section 6, same township, the Murphy Oil Co. abandoned No. 10 on the Alice Frederick farm. In Center Township, same county, Joe S. Young, Jr., and others' No. 2, on the Elizabeth Carrithers farm, Section 35, came in a dry hole. In Patoka Township, same county, Arthur Mauk and others' test on the Robert Howe farm, Section 1, was a duster at a depth of 1,160 feet. Smith and others are shut down at a depth of 2,000 feet at a test on the J. McCarty farm, Section 35, same township. Enlow and others are shut down at a test on the John Enlow farm, Section 15, Montgomery

(Continued on Page 123)

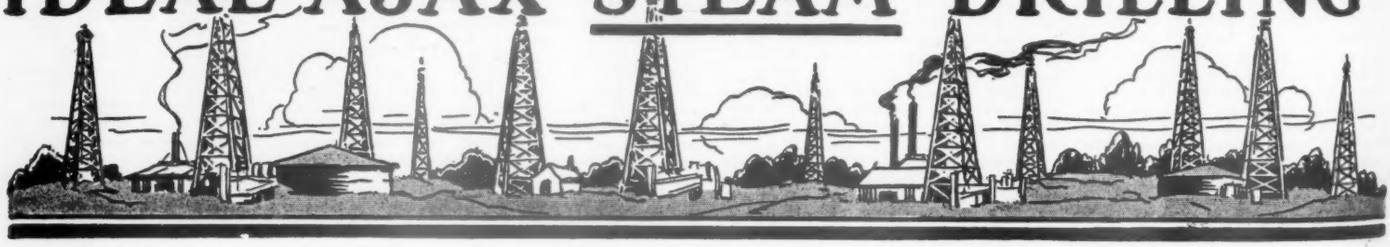
"...and it's sixty miles

AJAX ENGINES

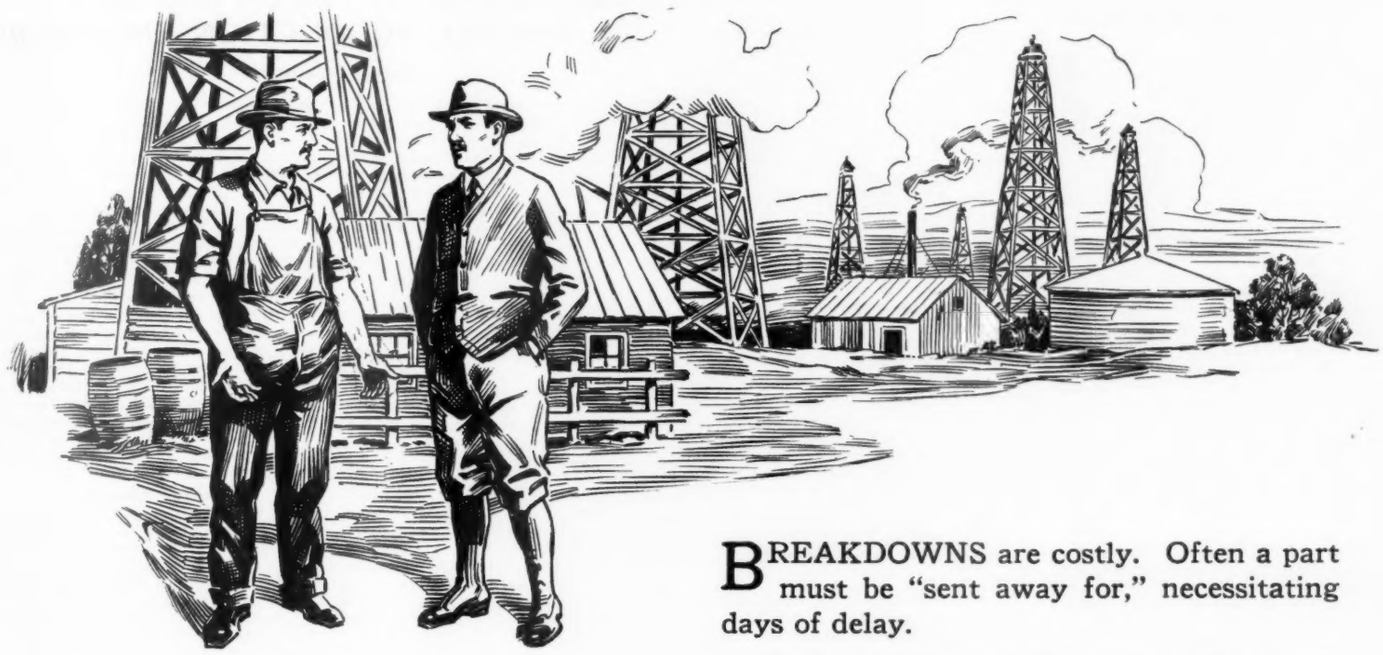
A CLUTCH is *necessary* on gas drilling engines, because of their low starting torque. And a clutch is also necessary to reverse the motion in order to release clutches on draw works.

But a clutch is unnecessary on steam drilling engines. Transmission is direct; power is regulated entirely by the throttle valve. Dependable, flexible steam power, safeguards the tools.

IDEAL-AJAX STEAM DRILLING

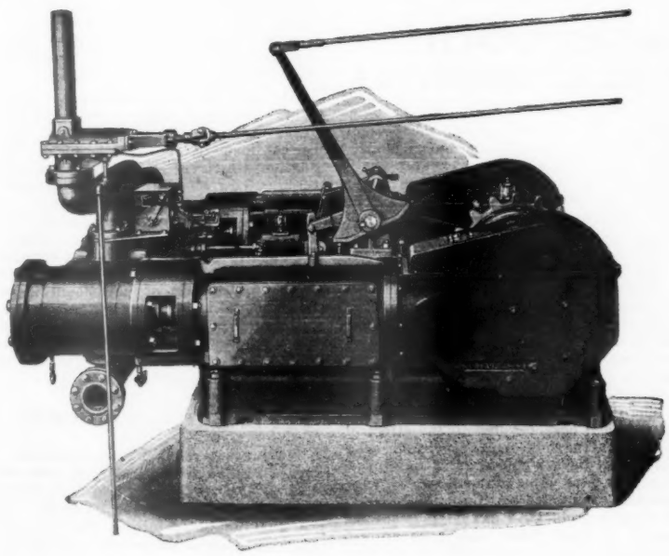


to a new part!"



BREAKDOWNS are costly. Often a part must be "sent away for," necessitating days of delay.

Idle machinery and idle crews multiply expense. But worse still—time lost may keep you from striking oil before competitors.



Breakdowns—are practically unknown to Ajax. Their rugged construction and surplus power eliminate trouble. Moreover, standard interchangeable parts are quickly secured from National Supply Co. stores, in every oil field.

Rely on Ajax and Ideal-Ajax Steam Drilling Engines and avoid costly shut-downs.

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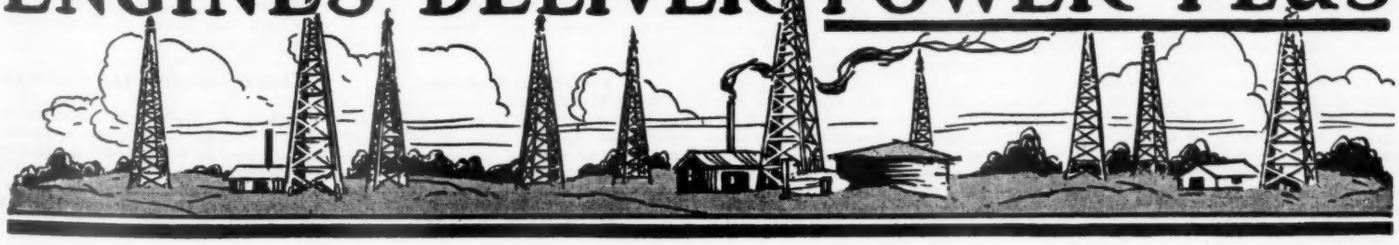
ENGINES DELIVER POWER-PLUS



Natural Gas Developments

NEW GAS RATE BASIS ADOPTED IN BROOKLYN

A new gas rate schedule is proposed by Brooklyn Union Gas Co., discarding the old flat-rate charge for gas and replacing it with more scientific rate schedules. The reason for the change is found in the huge proportion of gas customers who consume so little gas that servicing them represents a loss to the company. This has to be made up in the rate to larger gas users.

First step toward changing antiquated flat rate base was made by Consolidated Gas Co. last year when it offered optional rates to those customers who used gas in large quantities. This was really an intermediate step, as it did not cure the situation of a majority of customers using small amounts of gas. With Brooklyn Union rate going into effect, it is entirely likely Consolidated Gas will adopt a similar schedule in its New York City operations. It already has done something like this in Westchester County area and has just announced new rates for house heating there which will make gas more of a competitor with oil and coal.

Brooklyn Union Gas is experiencing little opposition from its consumers on its new rate schedule. It sent out informative letters to 680,000 consumers outlining the new schedule and has received hundreds of inquiries regarding it. A new "Rate Bureau" has been established to inform inquiring customers, who call or telephone, of the meaning and reason for new schedule. The public reception, on the whole, has been favorable.

An example of the manner in which the relatively small proportion of large consumers, under old flat rates, really paid the way of all, may be cited from the company's experience. This shows that the cost of installing meters, maintenance and general overhead, without including manufacturing and distribution costs, was 95 cents a month for every consumer. Against this there are hundreds of thousands of monthly bills of less than $1 for gas consumed. Such customers were serviced at a loss. In fact, 70 per cent of the 680,000 consumers use only 25 per cent of gas sold, and the loss incurred on many of these has to be made up by profit from the 30 per cent of customers using 75 per cent of gas sold. So the latter type was penalized to make up the deficiency of small gas consumers.

The first way of getting around this is the new schedule charging 95 cents a month for the first 200 feet of gas consumed. This means no bill can be less than 95 cents a month. After that the rate is 9 cents for each 100 feet. As this works out, a consumer using 2,800 feet a month pays only 3 cents more a month for his gas. A consumer of 3,200 feet a month would save 3 cents a month, and on higher consumption the monthly saving increases. Under the old rate, $1.15 a thousand feet applied to domestic consumers.

So far as domestic consumers are concerned, the new rate is so established that the company's income is not increased over the older rate. But there is a more equitable distribution among consumers of the cost of doing business.

The new schedule provides a separate rate for industrial gas consumers. It is from this source the company must look for any real and sustained increase in business. With the casual domestic consumer paying on a more equitable basis, company can fix rates for quantity consumers that will put gas on a more competitive cost basis with coal, oil and coke. This will increase average use of large plant facilities to the benefit of company and consumer alike.

KNORPP GETS CERTIFICATE

TOPEKA, Kans., May 12.—The Kansas Public Service Commission has issued a certificate of convenience as a public utility to the Industrial Gas Co. of Topeka and Kansas City, Kans. There are two companies, one for Topeka and one for Kansas City, each a local distributing company. The main company is the pipe line company to transport gas from the Texas fields to Topeka and Kansas City.

Granting of the certificates to the John L. Knorpp gas interests by the Kansas Public Service Commission would open the way for construction of the Knorpp pipe line, provided the Missouri Public Service Commission gave the same privilege, M. L. Alden, attorney for the Knorpp interests, said. If all the franchises carry, the pipe-line construction work will be complete by January 1, 1929, the company asserts.

Robert D. Garver, attorney for the Doherty interests, said the Doherty distributing companies would continue to fight the new company, but he could not say what action would be taken.

FRANCHISE AT ROSENBURG

Houston Gulf Gas Co. has been granted a franchise to distribute natural gas at Rosenburg, Fort Bend County, Texas, and is starting laying lines. In addition to supplying domestic consumers, this company will provide gas to cotton gins and a large brick plant there. To supply this gas, a 7-mile line will have to be laid to the company's trunk line from Southwest Texas fields to Houston.

CO-OPERATION BETWEEN GAS MEN AND OIL PRODUCTION ENGINEERS

Specially Contributed

We have been reading of the rapid strides being made in co-operation among the oil companies, all tending towards increasing the ultimate production of oil and in restricting present production as much as possible. It is needless to state that the gas companies are engaged in the same type of co-operative measures but relating to natural gas. The present paper will attempt to show the advantage and necessity for co-operation between the gas companies and oil companies whereby ultimate gain will result to both industries.

By way of preface, and in order to point out some of the natural causes for the waste of gas in the past, it might be well to cite some of the practices. The value of natural gas has been overlooked by the average oil man because he has been concerned primarily with the production of oil. The gas associated with the oil and occurring in strata either overlying or underlying productive oil formations was considered an attendant evil which must be eliminated as quickly and cheaply as possible, consequently when gas sands were found overlying oil sands, the gas was allowed to escape to the air as rapidly as possible to relieve the pressure and thus permit of deeper drilling.

Fortunately, such practice is in general, obsolete except in outlying wildcat territory and in territory where there is no present sale for the gas. Improved drilling methods make it possible to seal off overlying gas sands. In so far as the gas associated with the oil was concerned, the general opinion was, that the maximum oil could be obtained by allowing the oil to flow through the casing and to reduce the well pressure as much as possible. If the gas production was increased, no cognizance was taken of the increase because the gas had no apparent value and in as much as no work was required to get rid of it other than to blow it into the air, no attempt was made to eliminate or reduce the waste. It is only since its value as a source of energy necessary to move the oil through the sand to the wells has been recognised that any concerted attempt has been made to conserve the gas. The effect of conserving casinghead gas on gasoline plant installations will not be discussed in this paper. However, the subject is of vital interest to the manufacturers of natural gas.

Need of Education

By way of digression, if it were possible to put across the idea that the gas has a definite value to the oil producer aside from its value in the production of oil much of the present waste could be eliminated. An ideal way in which this could be accomplished would be to require all those engaged in the production of oil to engage in the gas business whereby the great importance of gas would be brought forcibly home to them. However, this is neither practical nor possible so it remains with the transporters and marketers of natural gas to bring this about by some method of co-operation. In all cooperative work, it is essential that those directly connected with the movement must give as well as benefit. Once a common understanding has been reached, the details become of secondary importance.

The natural gas companies are directly concerned with a future supply of natural gas, hence their efforts must be confined to that phase of oil production which will result in conserving the gas. In so doing, it will undoubtedly become necessary for the gas companies to occasion some inconvenience and possibly some apparent immediate decrease in revenue. However, considering the fact that the conserving of gas for future use is of paramount importance to the gas companies, even if there were no hope of making good the loss due to lower revenue, some co-operation would be justified as the life of the

(Continued on Page 81)

PROGRESS IN MIXED GAS RESEARCH REPORTED BY A.G.A. COMMITTEE

The progress report of the committee on mixed gas research, a division of the American Gas Association, has just been issued to member companies "for criticism only." The foreword of the report says "the practice of mixing various gases represents one of the greatest possibilities for economical production existing in the gas manufacturing business today. Contrasted with this fact it also offers the greatest potential difficulties to satisfactory service unless the methods are correctly planned and the variations of basic factors are properly controlled.

"After more than 100 years of experimentation, the efficiency of the modern gas-making set has been increased to approximately 75 per cent. Accepting this figure, we do not find room for any startling improvements in that field. Where large quantities of gases are available, however, as by-products from other industries or from processes of low production cost, it is often possible to effect real economies in the cost of gas supplied to the consumer by mixing them with the base gas available."

The last statement is believed to be in line with the joint program now under way by the Combustion Engineering Corp. and the Public Service Corp. of New Jersey, under which plan the former company is to supply the latter with a large quantity of gas produced by the low temperature distillation method which will be employed in the new plant of the Combustion Engineering Corp. now under construction at New Brunswick, N. J.

The outstanding benefits which are expected to result from the investigations being conducted on the utilization of mixed gas are indicated in the following excerpts from the report:

"The mixing of gases not only makes possible the augmentation of the present supplies of natural gases, but also permits the use of gases often cheaply available as by-products of other industries or from low cost processes. It opens the way to varied plant equipment, thus leading to economy in production.

Increase Capacity

"In short, the mixing of gases tends to increase the flexibility of gas producing equipment from the standpoint of both economy and plant capacity. This cannot fail to carry the gas industry toward what should be its ultimate goal—placing gas in the position of being the universal fuel wherever heat is needed."

The first studies of the mixed gas committee have been devoted to the effect of variations in the factors of gas service that affect burner operation. Many investigations have been carried out by various gas companies for the solution of a particular problem in gas mixing, but the results of their work cannot be applied nationally, where conditions are generally different. On the other hand, it was reasoned, a study of fundamental factors should have an important bearing not only on present mixing problems, but also on situations which might arise in the future. Therefore, it was decided that this be carried out as far as possible through the medium of gases now being supplied in the various parts of the country.

Experiments Preliminary

Since the experiments are still in a preliminary stage it is suggested by the committee that the limits established be regarded as definite indications rather than final conclusions. Tests have so far been completed on manufactured gas mixtures of 450 and 550 B.t.u. and it is

(Continued on Page 124)

TAYLOR, TEX., GAS SURVEY

Having secured a 25-year franchise to put gas in Taylor, Tex., actual work was started by Otto Starker and E. U. Young of the Community Natural Gas Co., who are making blueprints of the town and marking lines so as to reach the greatest number of consumers. Construction will begin not later than July 15.

LOS ANGELES RATE FIGHT

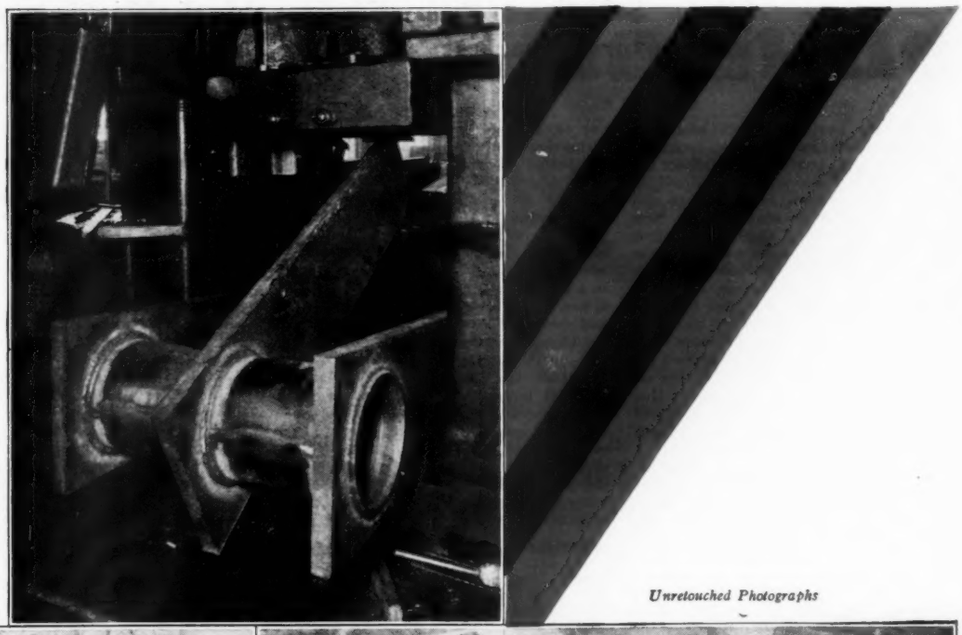
The Los Angeles Gas & Electric Corp. is fighting a suggestion by City Attorney Stephens that its rates be reduced $500,000 or more annually.

NAMED COMMERCIAL MANAGER

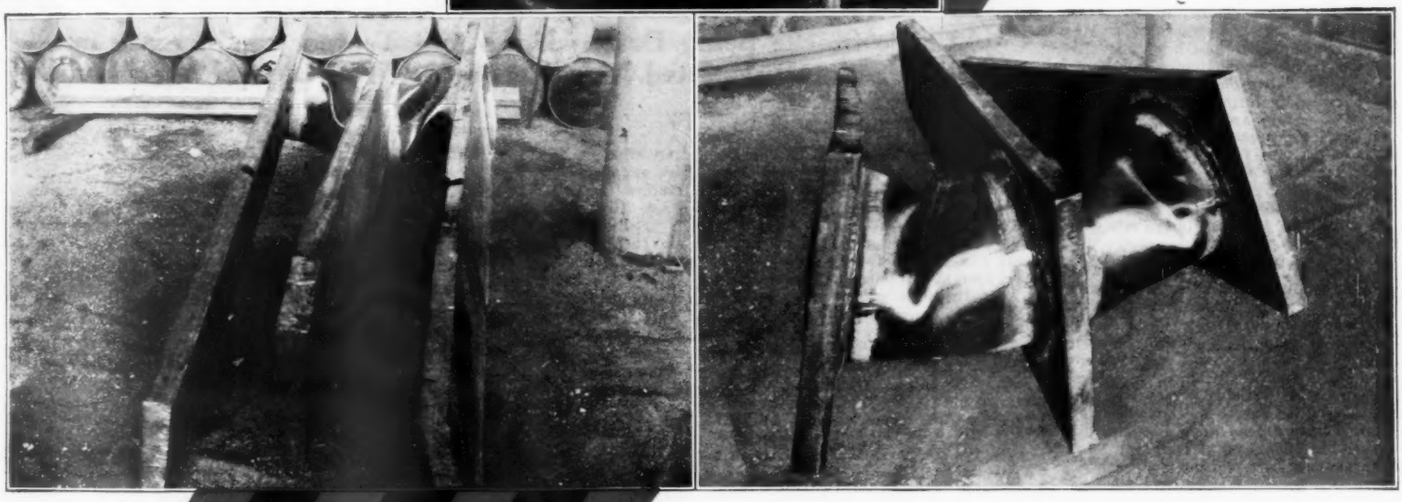
Robert E. Davis, who has been connected with the Houston Gas & Fuel Co. for the past 10 years, has been appointed commercial manager of the company, William A. Raymond, general manager, announced. Mr. Davis succeeds Harry E. Danner, who resigned.

When the Twist Came

In this test, a short length of Smithsteel Gas Line Pipe was welded on to three beams of 2-inch plate and subjected to twist in a powerful press as shown in the photograph at the right. The results are shown below.



Unretouched Photographs



Although completely distorted throughout under this 45 degree twist, the Smithweld did not fail at any point.

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Geologic Factors in Water Flooding

Selection of Properties Probably the Most Important Feature. Character of Sand Should First Be Determined

By Paul D. Torrey*
Geologist

Within the past few years numerous articles in trade journals and technical papers have been published describing the practice of water flooding in the Bradford Field of northwestern Pennsylvania and the Allegany fields of southwestern New York. The majority of these publications have given some consideration to the geologic factors that influence the recovery of oil by flooding, but in many instances the information presented has been very meager and of a more or less incidental character. The general data that have been published reflects to a great extent the ideas of development in this region in that the technology of production has been emphasized with a consequent neglect of other features, which in many cases seem to be of equal importance.

The notable advances in operating efficiency over the past methods of oil production certainly merit all of the recognition that has been given, but there has been and still seems to be a lack of appreciation of some of the more basic principles that control the effectiveness of flooding operations. From a fundamental standpoint, the character of the reservoir rock is the deciding factor in the success or failure of water floods. Although geologic conditions are unusually favorable in the region under consideration the variability of results that have been obtained indicates that the lack of success in certain areas may not be attributable to poor technology alone, but rather is due to a failure to take advantage of conditions that may occur in the sand body which have a marked effect upon the rate and direction of flood movement or to poor judgment in the selection of operating territory.

Selection of Properties

The selection of properties is probably the most important feature of flooding operations. Ordinarily this can be done with a reasonable degree of safety by a study of the results that have been obtained on adjoining tracts, but in many cases the data available are entirely inadequate for the purposes desired and the operator must depend upon his past experience for guidance in development. The latter method has frequently given very unsatisfactory results and in consequence there is a growing need for other criteria which may be accepted with greater confidence in the selection, operation and valuation of properties. In certain respects this is a difficult problem, for in many cases the unreliability or lack of subsurface data will afford little opportunity for a careful study of the conditions occurring in the sand body.

The value of subsurface information cannot be overemphasized and it unquestionably would be good policy to actually determine the character of the sand before a major program of development is started if there is any doubt as to the results that will be obtained. It is believed that the constantly increasing value of land combined with a rather uncertain oil market will eventually compel operators to give more careful consideration to some of the factors which may decide the degree of success that can be expected from their investment. For this reason, it seems most desirable to summarize the information that is available regarding the effect of geologic factors on flood recovery and to suggest methods of operation that will allow for the most efficient development of a property.

Origin of Oil Sands of Bradford and Allegany

The most important oil-producing sands of the Bradford and Allegany Fields occur in the lower part of the Chemung formation of upper Devonian age. During the period in which these sands were deposited, nearly the whole of the southern half of the North American continent was covered by the waters of a great interior sea which extended from the Arctic region far south and at times connected with the present Gulf of Mexico. It was in a great bay of this sea, which extended across western and central Pennsylvania and southern New York that the beds of the Chemung were deposited. To the east and northeast of this bay the lost continent of Appalachia existed. Streams of probable large size flowed westward from this ancient land mass, depositing their burden of sediments in deltas, flood plains and in the depths of the bay itself. The shores of the bay were low and flat and the shore line was probably broken by numerous lagoons and estuaries. Outside of a few primitive amphibians, no land-living animals existed, but the lower waters of the streams and the bay teemed with numerous varieties of brackish water and marine animals. The monotony of the landscape was broken by thick growths of ferns, rushes and other grass-like plants which flourished in the swamps and tidal flats. Some of these plants grew to considerable size and they undoubtedly were the ancestors of the great coal-forming forests which existed in later periods. There were no flowers, since insects, so necessary for fertilization, did not exist, and the only sounds that broke the stillness of the day were the rushing of the waters, the rustle of the wind or the occasional croak of an amphibian from the marshes. The waters of the great bay are believed to have been comparatively shallow, since the sediments show evidence of ripple marks and cross-bedding that can only originate in waters of moderate depth. The beds of the Chemung are almost entirely of a sandy character, although the lithologic uniformity of the succession of rocks is broken by thin limestones and calcareous beds which indicate gradual changes in the depth of the water.

Advance of Waters

The Bradford sand is believed to represent the initial invasion of the Chemung Sea. The waters advanced fairly rapidly over the low-lying lands, reworking and stratifying the fine sands and clays which were carried for hundreds and perhaps thousands of miles from the high lands to the east. Submarine currents cut out and rolled mud balls from the bed rock which were mixed with the sands and which are now so commonly found in the lower part of the present oil-producing horizons. The conditions of sedimentation were not constant. There were gradual oscillations of the shore line which resulted in the depo-

(Continued on Page 111)

*Before Eastern district, Division of Development and Production Engineering, A. P.I., Bradford, Pa., May 17, 1928.

California Decline Last Half of 1928

Crude Stocks Being Drawn Upon and Temporary Increase in Production Discounted. More Favorable Than in Year and Half

By J. E. Eaton
Consulting Geologist

Production in California is now expected to reach its peak for the year in or about June, and then to decline slowly during the last half of 1928. The peak at Long Beach, considerably delayed by deeper drilling, is perhaps about six weeks distant, and there seems to be no other current development large enough to maintain state production after this is past. It is possible that production in California will drop below 600,000 bbls. by winter.

I will first call attention to the accompanying graph. Note that the potential yield of the State (upper line) has passed the potential peak of 1927, but that the actual yield (heavy lower line) is lower than that of last year. The upper line reflects the present large increase at Long Beach. It shows what a sharp upturn would have occurred if there had been no shut-in. The lower line shows the actual production after shutting in 52,000 bbls. additional of heavy and light oils in April and March.

California shut-ins have been so prompt and efficient that their valuable effects are not always obvious. The leading operators do not delay, but act at the start of a crisis. As a result, the weekly production figures show little change, and the average observer may not realize that overproduction and waste have been held in check only by real sacrifice and effort.

Note that production in California would now be in the neighborhood of 680,000 bbls. daily, and the national situation somewhat less favorable, if operators and the State of California had not recently co-operated to reduce long term storage with its loss of volatile matter, and a waste of natural gas. The action which was taken shows both good business judgment and a regard for posterity.

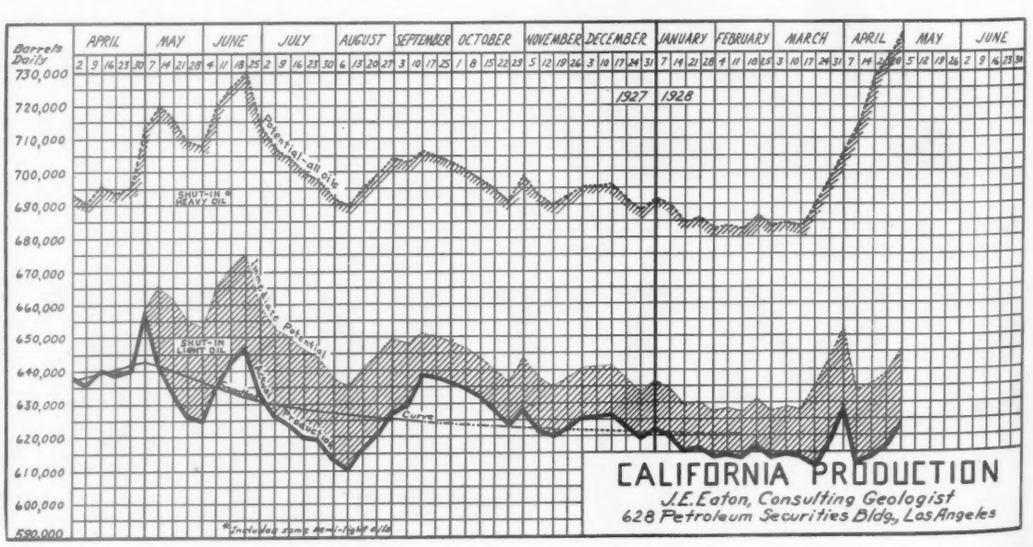
Long Beach Peak

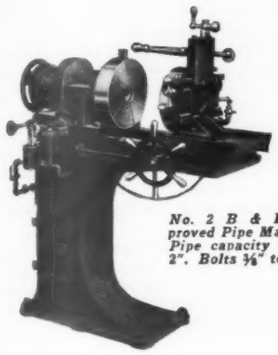
Production at Long Beach will rise rapidly during the month of May, and state production will doubtless follow closely. These features should be discounted, however, for the top is not far off.

The Long Beach peak has been delayed about six weeks by deeper drilling, and may not be reached before June. It seems probable that the higher estimate of 195,000 bbls. made for it (The Oil and Gas Journal, January 5) will be nearly correct, but the field may reach or exceed 200,000 bbls. I expect the peak to be flat, and the subsequent decline to be rather slow.

The expected decline at Long Beach to start in June or soon thereafter is based on computations indicating a noticeable decline in gas pressure and less frequent completions after the next six weeks. Tremendously thick deep sands and a drilling to superdeep undrained zones has sustained initial pressures and productions, but a gradual decrease in the average initial should become apparent in the near future. Starting about June there will be fewer completions, with the result that the rise will be first retarded.

(Continued on Page 111)





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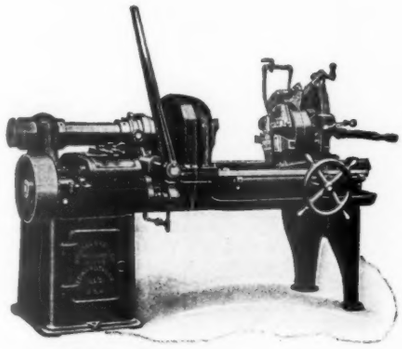

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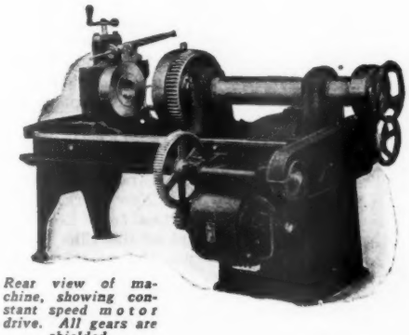
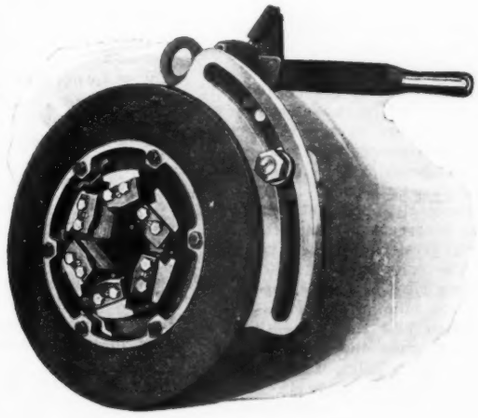


Rear view of machine, showing constant speed motor drive. All gears are shielded.

Large Landis Die Head.



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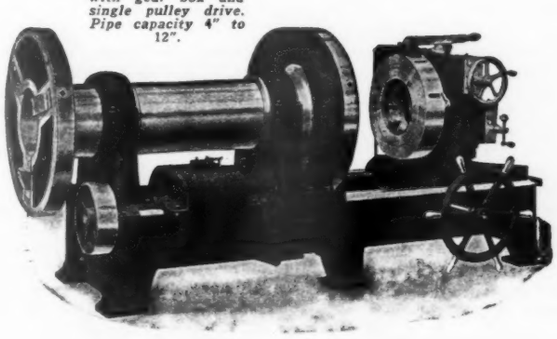

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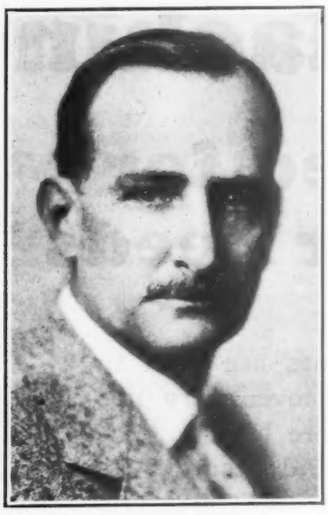

M. E. Lombardi

M. E. Lombardi was born in eastern Texas in 1879, and was graduated from Yale University in 1900 after completing the usual preliminary and high school studies. He subsequently took a special course in mining engineering in the University of California at Berkeley, located in the San Francisco Bay region, and entered the employ of the Kern Trading & Oil Company as an engineer and geologist. He continued in the employ of this concern, a subsidiary of the Southern Pacific Railroad, until the formation of the Pacific Oil Company, which was organized in 1921 to take over and operate the oil properties of the Southern Pacific Railroad then being developed by the Kern Trading & Oil Company. He was appointed assistant general manager of the Pacific Oil Company, which superseded the Kern Trading & Oil Company, and became assistant general manager of the producing department of the Standard Oil Company of California when this concern was consolidated with the Pacific Oil Company during the early part of 1926.

Mr. Lombardi, who is a director of the Standard Oil Company of California, having been appointed to this position in March, 1927, is one of the most successful production managers in the California oil industry. He is a director of the Chamber of Mines and Oil, the membership of which represents practically the entire California oil and gas industry, and he was recently named chairman of the general California conservation committee appointed by E. W. Clark, president of the American Petroleum Institute. The committee of which Mr. Lombardi is the directing head is a very important one as its objective is the elimination of waste by effecting gas conservation and the prevention of uneconomic production of crude oil. Mr. Lombardi has been very active in the affairs of the American Petroleum Institute and, in addition to his service on several standardization committees, he was appointed Pacific Coast representative of the American Petroleum Institute's gas conservation committee during the latter part of last year.

PERSONAL PARAGRAPHS

H. L. Labert, petroleum engineer, is now located at Owensboro, Ky.

* * *

F. C. Vandeinse has resigned as director and vice president of California Petroleum Corporation, effective June 1.

* * *

E. B. Reeser, president of the Barnsdall Oil Corporation, is back in Tulsa after a two weeks' visit in New York.

E. L. Doheny, Jr., has returned to Los Angeles, Calif., from the East.

* * *

J. E. Huff, producer of Tulsa, is home after completing a tour of the Kansas fields.

* * *

Frank L. Moore, producer of Tulsa, has completed a trip over the oil fields of North Texas.

* * *

A. B. Macbeth, president of the Southern California Gas Company, has been visiting in Texas.

* * *

Tiffany Richardson has been elected a director of Pierce Petroleum Corporation to fill a vacancy.

* * *

C. C. Spicer, president of the Republic Petroleum Company, recently returned to Los Angeles, from San Francisco.

* * *

Dr. Roy Cross, of Kansas City, Mo., is expected to arrive soon in Los Angeles, Calif., for a visit of several weeks.

* * *

Joe T. King, president of the Kingwood Oil Company of Okmulgee, Okla., is visiting the fields of North Central Texas.

* * *

E. H. Moore, president of the Independent Oil & Gas Company, has returned to Tulsa after a business trip to New York.

* * *

W. T. Funk, vice president of the Carter Oil Company, is back in Tulsa, after a trip to his former headquarters at Denver, Colo.

* * *

Frank W. Kirk, general superintendent of the Houston Pipe Line Company, Houston, Tex., is on an inspection tour in southwest Texas.

* * *

Frank Phillips, president of the Phillips Petroleum Company, has been elected a director of the Chatham-Phoenix National Bank, New York.

* * *

J. H. Cain, chief rate clerk of the Humble Oil & Refining Company, Houston, Tex., has returned to his desk following a two weeks' vacation.

* * *

R. A. Fouts, president of the Deepwater Oil Refineries, Inc., Houston, Tex., has returned to his office following a two weeks' business trip to Chicago, Ill.

* * *

H. C. Victory, assistant to the chief scout for the Humble Oil & Refining Company, Houston, Tex., has been at the bedside of his mother, who has been ill at Livingston, Tex.

* * *

T. E. Wilkinson, head of the retail sales department of the Louisiana Oil Refining Corporation, spent the week in Cincinnati, Ohio, on an inspection of the Ohio division of the company.

* * *

George Coyle, general superintendent of the Prairie Pipe Line Company, has recovered from an attack of illness, and has been removed from St. John's Hospital in Tulsa, to his home.

* * *

W. A. Miller, Lima, Ohio, has been elected president of the Illinois Pipe Line Company; Charles J. Bunje, Findlay, Ohio, is vice president and treasurer, and O. F. Moore, Findlay, is secretary.

* * *

W. B. Pyron, of Houston, Tex., assistant vice president of the Gulf Production Company, has gone to Fort Riley, Kans., where he will spend two months at the army summer training camp.

* * *

F. H. Bivens, who has been connected with the Southern Counties Gas Company with offices in Los Angeles, Calif., since 1911, has just been elected vice president and placed in charge of public relations and sales.

* * *

E. H. Leroux, president, and E. E. LeMasters, general superintendent of the Oklahoma Pipe Line Company, are making their annual tour of inspection over all of the company's lines and stations in Oklahoma and Kansas.

* * *

Norman Meland, secretary-treasurer of the Goldeline Oil Corporation, has returned to the Oklahoma City, Okla., offices after spending several days on the company's leases in north Hutchinson County in the Texas Panhandle.

R. G. Barnum, president of the West Texas Oil and Gas Association and president of the Barnum Oil Company of Delaware, has returned to Baltimore, Md., after spending three weeks in the Hutchinson County Field of the Texas Panhandle.

* * *

Alfred A. Foote, chief engineer for Rycade Oil Corporation, Houston, Tex., spent a few days in Houston this week, and has returned to the company's Bayou Bouillon Field, St. Martin Parish, Louisiana, where he has been the past six weeks.

* * *

J. W. Bartlett, pipe line superintendent of the Houston Gulf Gas Company, Houston, Tex., has just returned from a trip to Waskom, northeast Texas, inspecting property of the Dixie Gulf Gas Company, another Moody-Seagraves company.

* * *

D. B. Harris, general superintendent of the Louisiana-Arkansas division of the Humble Oil & Refining Company, who has been in a hospital at Houston three weeks, accompanied a party of Houston Humble officials on a tour of West Texas fields.

* * *

George W. Crawford, L. B. Denning, Fred Crawford, T. B. Gregory and H. C. McEldowney, president of the Union Trust Company of Pittsburgh, Pa., have been making an inspection tour of the properties of the Lone Star Gas Company in Texas.

* * *

W. W. Blocker, assistant to the president of the Houston Oil Company and the Houston Pipe Line Company, and F. Y. Hutchinson, chief engineer, have returned to Houston after an inspection tour of the companies' holdings in southwest Texas. Their trip took them as far as Laredo.

* * *

O. R. Seagraves, of the Moody-Seagraves gas interests of Houston, Tex., made a quick trip to New York from Houston via plane last week. Spending Friday in Shreveport, La., he left early Saturday morning for New York, arriving at Mitchel Field in time for dinner that evening.

* * *

Joseph H. Bovaird, of the Bovaird Supply Company and Bovaird & Company, has been elected president of the Rotary Club in Bradford, Pa. Jerry B. Newby, of the Petroleum Reclamation Company was elected a member of the board of directors and Alfred D. Van Scoy, oil producer, was elected secretary.

* * *

R. W. Carroll, retired oil man and oil field supply dealer, and for years a traveler, who spends months at a time in New York, London or some other metropolis, writes from Los Angeles, Calif., that he is a resident of the Elks Club and expects to stay in California and at that address for several months.

* * *

E. W. Ramsey, of Tulsa, has been visiting Los Angeles, the present trip to California being occasioned by the deep zone development under way at Long Beach where the Ramsey Brothers originally had one of the most productive pieces of acreage in this field, later disposed of to the Rio Grande Oil Company.

* * *

H. E. Jackman, Rochester, N. Y., president of the Syndicate Oil & Gas Company, which has production in Greenwood and Allen Counties, and in Brown County, Texas, is visiting the western division office of his company at Wichita, Kans. C. L. Hoyt is district manager, and W. W. Peck is in charge of the land department.

* * *

Teodor Popescu, refinery chemist, and T. Dobrescu, engineer of the Credit Minier Petroleum Company, Rumania, are on an inspection trip of the Mid-Continent area. They arrived in this country from Rumania about six weeks ago and before returning expect to visit all the American oil fields.

* * *

J. J. Allein, of The Hague, production manager of the Royal Dutch group; Dr. J. Th. Erb, of The Hague, a director of the Royal Dutch company; Dr. Von Holst Pellakan, chief geologist of the Roxana Petroleum Corporation; G. S. Rollin, production manager and vice president of the Roxana corporation, and E. L. Lookabaugh, petroleum engineer for the same company, have been making a tour of the West Texas fields where the Roxana Petroleum Corporation, a Royal Dutch-Shell subsidiary, has large producing and pipe line interests.

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Field Problems and Their Solution

EDITED BY THOMAS F. SMILEY

In order that men connected with the drilling, producing and transporting branches of the petroleum industry may procure quickly a solution of many problems confronting them from time to time in their work, The Oil and Gas Journal has arranged with leading engineers and other recognized authorities to answer questions submitted by readers of this publication pertaining to the work of drilling and producing crude oil and transporting this product.

Everyone is invited to submit questions freely. These questions will be submitted to proper authorities by Mr. Smiley, who edits the page, and answers, based on the best available information, will be published. Each question should give as much detail as possible, especially where it relates to matters where depths of sands, types of sands and operations on adjoining properties would have a bearing on the problem involved. The source of all questions will be considered as confidential and only initials will be published in connection with the question.

In this connection, The Oil and Gas Journal will be glad to publish articles from field men who have devised new methods or practices which are improvements.

In case an immediate answer is important, one will be given by mail if the writer requests it.

A MATTER OF TEMPERATURE

In the enclosed article on "Finding Heating Value of Gas," clipped from the Field Problems page of The Oil and Gas Journal of May 3, there seems to be some inaccuracy as to the heat value of the gases mentioned. I quote the following authors:

Lighty, "Natural Gas," methane 913 to 1,003 B.t.u. per cubic foot; ethane 1,620 to 1,756 B.t.u. per cubic foot.

Westcott, "Handbook of Natural Gas," methane 1,003 B.t.u. per cubic foot; ethane 1,754 B.t.u. per cubic foot.

These values are for 1 cubic foot of gas at 60 degrees Fahrenheit and 14.7 pounds absolute pressure.—C. R. T.

The clipping which C. R. T. sends is a question as to the method of determining the heating value of a gas by analysis and the answer to the question. He is quite right in accepting the correctness of the authorities he cites for the heating value of methane and ethane at 60 degrees Fahrenheit and 14.7 pounds absolute pressure. However, in the clipping the heating value of the gases was predicated upon a temperature of 32 degrees Fahrenheit. The information contained in the answer to the question was obtained from Gill's "Gas and Fuel Analysis for Engineers." Thus we have the happy situation of both C. R. T. and the Field Problems page being right.

GAS NOT ALWAYS PRIME FACTOR

Is data available showing conclusively whether or not gas is always the principal factor in getting oil out of the ground? It does not seem to me that it is the principal factor in all cases.—B. A. H.

Your opinion that gas is not always the principal factor in recovering crude oil from the sand is correct. It is assumed that you refer to the oil entering the well and not to the methods of lifting oil to the surface.

Gas is the principal factor in practically all of the fields in the United States. In certain of the Russian oil fields and in Mexican oil fields, water is the principal mover of oil through the sand and to the wells. The water in the sand is under sufficient head to cause the wells to flow. Very little gas is present.

In a number of fields in this country, edge-water pressure aids in forcing oil into the wells, this being especially true after the gas pressure has declined to the point where the edge water pressure becomes a factor. However, if the edge water pressure is sufficiently great to allow the water to travel at a faster rate than the oil, some oil may be by-passed and trapped by the water.

SOME GAS QUESTIONS

We have struck gas at a depth of about 500 feet in the Farmerville Dome near Princeton, Ky. The gas has a strong smell of sulphur. Gas from our other wells brought in around 418 feet did not smell so strongly of sulphur. In this last well, too, there is much sulphur water and salt water. Is this gas with the strong odor of sulphur as valuable as gas without such an odor?

Should a well producing 1,000,000 feet of gas a day and costing around $100,000 to sink and case be a paying proposition? Would it be best to sell the gas to a large company at the well or pipe it into towns ourselves?

We have one well standing full of water to within 6 feet of the top. Through this water flows gas in what seems to be commercial quantity. If we cap this well and put in a valve, will the gas be as good as any other, or will the fact that it rises through 500 feet of water injure it?—W. S. L.

Answering your first question relative to the comparative value of gas contaminated with sulphur as against gas which does not contain sulphur, it is an established fact that sulphur is detrimental when present in a gas. The sulphur being in the form of hydrogen sulphide, it is poisonous, and in the presence of water it is corrosive.

As to the salability of the gas containing sulphur, it is doubtful if you can find a market for it because gas companies do not care to take it. As regards the gas found at greater depth, it is suggested that you get in touch with one of the gas companies. Unless you are assured of a commercial volume of gas for a long time ahead, you probably would be wise in selling the gas to some company at the well. It is presumed that the gas companies look after the gas wells from which they obtain the gas as is done in other parts of the country. Offhand it would appear that a million-foot gas well costing $100,000 to drill should pay out in good shape provided the production will last for at least a year. Before drilling wells you might consult a representative of a gas company operating in your district.

With reference to the last question pertaining to the gas well in which water is standing within 6 feet of the top, an investigation as to the source of the water and possibility of shutting it off in the well may prove profitable. Another suggestion would be to attempt to lower the water either by bailing or swabbing and then to install a siphon for maintaining the water at a low level in the well. This would increase the well pressure and should result in more gas entering the well. There is no objection to placing a valve on the well-head and utilizing the gas. However, it is questionable whether the volume of gas obtained will be worth piping from the well. Under the conditions, the gas pressure would be very low and a compressor would be necessary to boost the gas.

SHOULD CONSULT GEOLOGICAL DEPARTMENT

Our company drilled one well here and got oil and gas at 1,840-1,871 feet. Shot the well and oil and water flowed over the top for three days at intervals. Then while cleaning out the tools got fast and the casing collapsed near the top and we lost the hole. Now we are drilling another well about 800 feet from the No. 1. We missed the 1,840-foot sand and think we are close to a deeper sand, as the last 100 feet has run thus: Forty feet of sulphur and carbon, 60 feet of velvet-feeling or paraffin sand. Now we went through the "velvet" into just 1 foot of one of the samples I am sending. Can you find out from these samples if our sand is like what you have in the Seminole Field? We wonder if our "velvet" sand is the same as your Viola and if the other is like your Simpson. If it is, we think we have a chance to pick up the Wilcox under it.—O. T. L.

The information sought here should be obtained by consulting the Geological Department of your State (Indiana). The Field Problems page cannot venture to offer information on correlation of sands or conjectures as to what sort of formations are likely to be encountered. Questions of this kind are for the professional geologist who is acquainted with the subsurface features of the region inquired about. Under the microscope, the two samples sent show much the same characteristics. Both consist of irregular-shaped particles of sand with admixture of lime. When the samples were placed in hydrochloric acid the violent reaction between the limestone and the sand showed the proportion of lime present to be considerable. Nothing noted appears to indicate relationship between your "velvet" sand and the Viola limestone of Oklahoma.

TO PAINT OR NOT TO PAINT

We make it a practice on our lease to keep all equipment exposed to the weather painted and there is no question as to this being good practice. But one of our men contends that even new galvanized iron equipment should be painted, too. I can't see any reason for doing this. What is your opinion?—T. O. C.

Painting equipment that already is protected with a coat of zinc would seem very much like painting the lily. It may be that the man to whom you refer believes there are spots uncovered by the zinc and that these spots afford opportunity for rust to begin its work. As the galvanizing process consists in immersing the iron substance in melted zinc, it is wholly likely that the protection it affords is at least as thorough as that imparted by the paint brush. No reason is apparent for painting new galvanized iron equipment.

RECONDITIONING SUCKER-RODS

Is there any practical and effective method of reconditioning sucker-rods that have become crystallized? Can the steel be restored to its original condition after use has developed fatigue to the point where rod breaks become frequent? A reply will be appreciated.—G. F.

The reconditioning of sucker-rods is a metallurgical process. Hence to obtain the best results the temperature should be controlled in order to condition the rods uniformly. Engineers most familiar with metallurgy and the use to which sucker-rods are put do not recommend a field method for restoring the steel to its original condition. They suggest changing sucker-rods frequently; that is, running one string for a short time and then allowing it to rest while another is being used. The first string then can be used for another period. It has been noted that when rods receive an occasional rest their working life is increased.

Attempts have been made in the field to recondition sucker-rods by "burning" them. This is accomplished by pouring oil over a pile of rods and then igniting the oil. It is questionable whether such a practice will result in a saving, as the reconditioning in all probability will not be uniform.

HAMMER TEST FOR WELDS

In an article on welding pipe I find the "hammer test" mentioned, but nothing to indicate what this test is. The term suggests tapping with a hammer, but this doesn't seem like much of a test to me, so I don't believe the guess is a good one. Please explain what the hammer test is. Are there other tests? What is their relative value?—P. J. R.

The hammer test is one in which the pipe is filled with water at a certain hydraulic pressure and then subjected to blows from a hammer. If there are defects in the weld, water is forced through the pipe at the weak spots from the inside under the action of the hammer blows. Formerly a common machinists' hammer was used, but this has been supplanted by an automatic hammer, or series of hammers, operated by air pressure. The extent to which this test is used at pipe mills throughout the country indicates that it is regarded as the most satisfactory one.

The kerosene test is another employed in the detection of defective welds. Kerosene is applied to the surface of the weld and if there are imperfections the kerosene will seep through and appear on the inside. Obviously this test could not be utilized on pipe except of very large size because of the invisibility of any kerosene that might work through to the inside.

Commenting on the hammer test, Captain Jessop, United States Navy, retired, in a paper delivered before the American Society of Naval Engineers, said:

"The writer has proven to his own satisfaction that the hammer test, which, by the way, is seldom mentioned as a method of testing a weld, will invariably show up a really defective weld; that is, a weld sufficiently defective to seriously affect its strength.

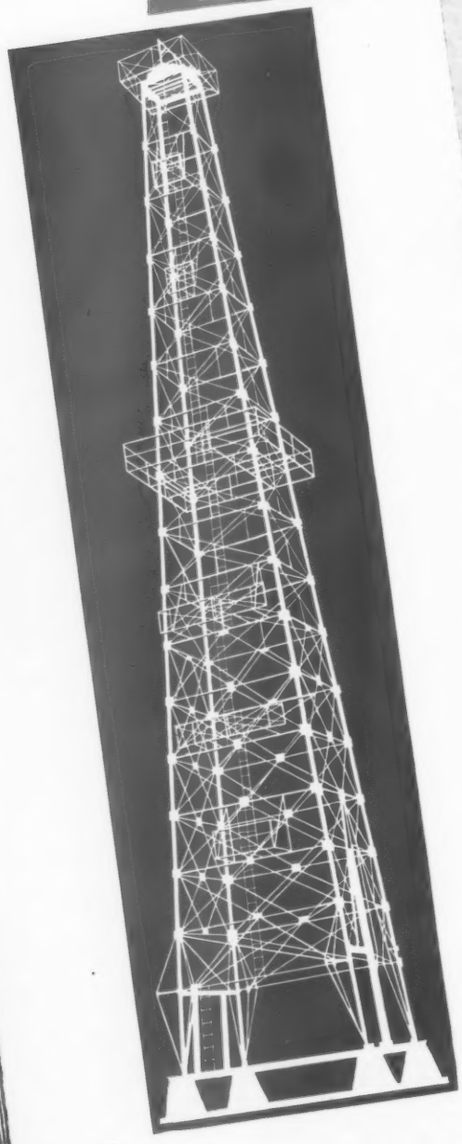
"Just as you can detect laminations by the hammer, so you can detect unwelded spots in the weld, and by the action of the metal under the hammer you can determine its ductility and general condition.

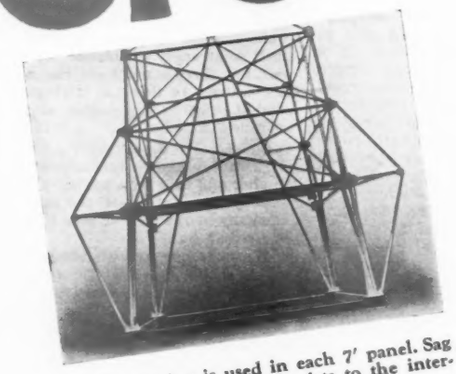
"It is seldom that a pressure test will develop a weakness in a weld which will not be shown by the seepage of the liquid before the pressure test is applied. Weld a crack in a cylinder, fill it with water, and if the water does not come through without pressure, it seldom will appear when the pressure is applied, because a weld which is defective to the point of weakness will not hold water. This, of course, is not an infallible rule, because in a weld of any thickness it is possible that a wall impervious to water might have been formed, while the greater part of the metal did not adhere, but this is not a probable occurrence, and would be shown up by the hammer test.

"In other words, you may trust a weld which does not show defects by visual inspection and the hammer test, both of which are practical tests for any work.

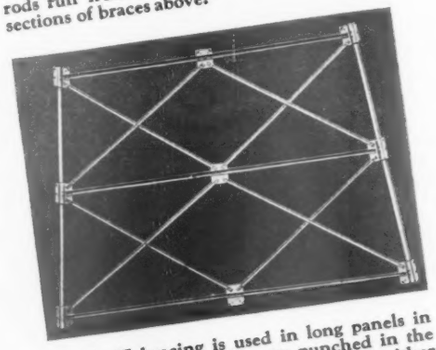
"The ordinary porosity of the welded metal should not be confused with bad welding because it seems not to weaken the structure to an appreciable extent, and where work must be water-tight the peening of the surface is all that is necessary to prevent seepage."

The NEW Moore

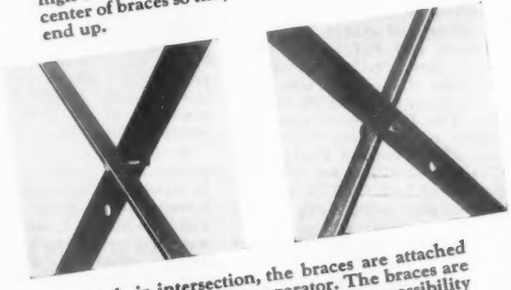




Full X bracing is used in each 7′ panel. Sag rods run from the longer girts to the intersections of braces above.



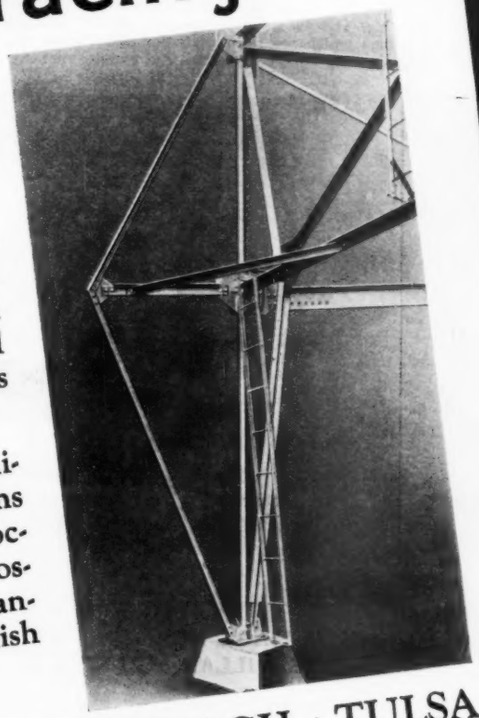
Double X bracing is used in long panels in high derricks. Two holes are punched in the center of braces so they can be used with either end up.



At their intersection, the braces are attached by a bolt and a pipe separator. The braces are thus held together rigidly, and the possibility of rattling is eliminated.

Champion

A SUPER DERRICK with *super* bracing



The Bracing in the Moore Champion Derrick is of structural steel throughout. Its design gives an exceptionally rigid structure, easily and quickly erected.

A new feature is the outside wing bracing in the first panel. This compensates for the lack of regular type bracing inside, which must be omitted because of the bull wheel or draw works. The wing bracing gives the utmost rigidity to the derrick.

Bracing is furnished galvanized or aluminum painted. (The seamless leg sections are always galvanized.) The hot dip process is used for galvanizing. Where atmospheric conditions do not demand galvanized bracing, the aluminum painted finish gives satisfaction.

Write for Descriptive Bulletin

LEE C. MOORE & CO., *Inc.* PITTSBURGH · TULSA

Established 1907
NEW YORK OFFICES: OILFIELD EQUIPMENT COMPANY
30 CHURCH ST., NEW YORK, N. Y.
Stocks in All Principal Fields

DALLAS, TEXAS
HOUSTON, TEXAS
WICHITA, KANSAS

PARKERSBURG, W. VA.
CASPER, WYO.
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Moore

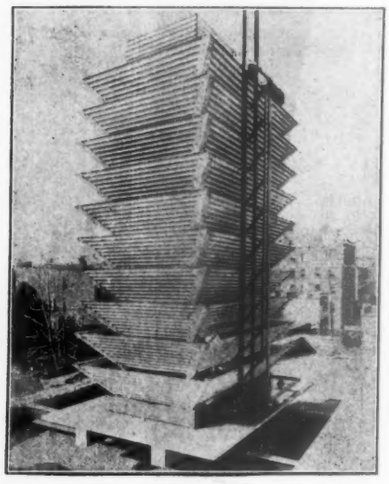
STEEL DERRICKS
ALL STEEL RIG EQUIPMENT

EQUIPMENT AND SUPPLIES

COOLING TOWERS COME OUT OF STORM UNHURT

Many subjects have been studied by engineers in the last 20 years in developing cooling towers, mechanical draft and chimney towers and spray nozzle cooling systems. Cooling towers manufactured by the Cooling Tower Co., Inc., New York, are used in cooling circulating water for ammonia condensers, steam condensers, oil refining, Diesel engines, etc. Cooling efficiency, atmospheric conditions, air and water ratios, cooling surfaces and distribution of water, windage losses, strength and suitability of materials, internal resistance, corrosion, rot, and electrolysis—these are some of the subjects to which time and money have been devoted in years of laboratory research.

A cooling tower must be not only self-supporting; it must resist also the destructive force of high winds and hurricanes. This requires heavy internal bracing and plenty of good materials of construction. In July, 1916, one of the Cooling Tower Co.'s towers came through the Cincinnati cyclone without damage. One of its towers atop a St. Petersburg theater was directly in the path of the Florida hurricane. While the terrific gale ripped the tile from the roof and blew down structures all around, it did not loosen a board in the tower. All of the company's cooling towers in Florida; Mobile, Ala.; and Cuba came through the storms undamaged.



The frame of the tower consists of bents of steel or timber on equal centers connected by longitudinal stringers forming panels on each side of the tower. These bents are diagonally braced for side wind thrust. Depending on the length of the tower, one or more pairs of the side panels formed by the bents are diagonally braced for end-wind thrust. This bracing to resist side-wind and end-wind thrust results in a rigid structure capable of taking heavy wind pressure from all directions.

"OILWELL" HOIST COMBINES ADVANCED IDEAS

The "Oilwell" production or tubing hoist manufactured by the Oil Well Supply Co. combines advanced engineering ideas in design and construction.

It is recommended for all kinds of maintenance service on any type of well and is chain driven from the calf wheel or from any type of reduction gear.

The drum, with a spooling capacity of 3,500 feet of seven-eighths-inch wire line, is mounted on heavy Timken roller bearings which assure transmission of maximum power. The Timken roller bearings are grease lubricated by the Alemite system and require attention only at long intervals.

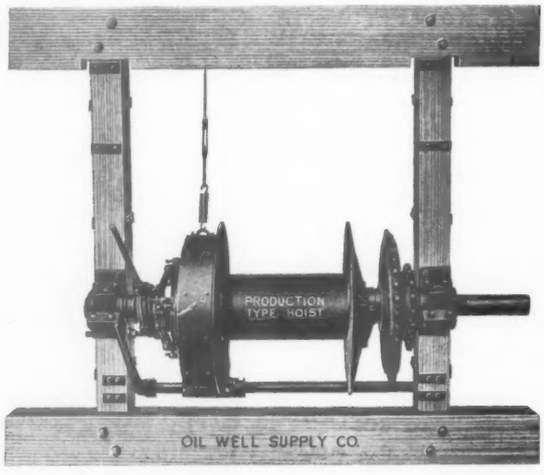
The shaft is of hot-rolled steel, full floating, and is mounted in two heavy bearings which are set into the uprights and securely bolted to them. The clutch is of multiple-disc dry-plate friction type and operates with exceptional smoothness which eliminates physical strain on the operator.

The clutch is easily engaged and held by means of a toggle action, and easy adjustment is provided for take up on wear in the lining.

The brake, self-contained, is mounted on the back of the upright. It consists of a single band which is adjustable and the standard shaft type of operating mechanism.

All sprockets are cast steel and are keyed to the shaft. Any desired speed may be obtained by the use of special sprockets.

Once installed, this hoist lifts heavy loads without jerking, thereby lengthening the life of the rig and all component parts of the equipment.



TRUCK IS MADE INTO CATERPILLAR "TANK"

The modern truck is the fastest and most economical means of transportation but—its usefulness is interrupted when heavy sand, mud or snow is encountered. Truk-Traks are a simple, compact device which swings out of the way when not needed and permits usual operation of truck on hard surfaced roads. It is ready to drop into operating position and convert the truck into a sure-footed caterpillar "tank" in the same time that is required to put on a pair of ordinary mud chains.

Hobbs Truk-Traks, manufactured by the Hobbs Manufacturing Co., Fort Worth, Tex., are designed to take heavily loaded trucks over roads and across fields where only caterpillar tractors or teams ordinarily can go. Like all other equipment, there is a limit to their performance, but Truk-Traks, the manufacturers say, will take a truck safely through heavy sand and mud that will stop any truck not equipped with them.

PRESCOTT CLOSES CONTRACTS

The Prescott Co., Menominee, Mich., has closed contracts for installation of seven pumps on the pipe line being built by the Pasotex Pipe Line Co., from its refinery in El Paso, Tex., to the West Texas oil fields. The contracts include four electrically driven reciprocating plunger pumps and three Diesel engine driven plunger pumps, of capacities slightly under 1,000 barrels a day.

LINCOLN ANNOUNCES SHIFTS

The Lincoln Electric Co., Cleveland, announces the following changes and additions to its sales and welder service divisions: H. A. Stamper has been placed in charge of consumer motor sales in the New York district. D. F. Titus is now in charge of welder service in the New York district. A. H. Kirkpatrick replaces D. W. Carver as manager of welder service in the Cincinnati district, Mr. Carver having been transferred to the Cleveland district. H. E. Nelson has taken charge of consumer motor sales in the Cincinnati district. P. A. Ludwig has assumed charge of welder service in Philadelphia and vicinity. Forrest Kessler has been transferred from the welding time study department at the factory to the welder service division in the Cleveland district. J. R. Rothermel is in charge of welder service in Chicago and W. Weaver has been placed in charge of consumer motor sales in the same district.

INGERSOLL-RAND BULLETIN

Ingersoll-Rand Co., 11 Broadway, New York, announces publication of a 44-page bulletin on ER and FR compressors and vacuum pumps. These are the small and intermediate size machines produced by the company.

The compressors are furnished for handling either air or gas. They are of straight-line type and are built as single-stage, two-stage, or three-stage units. The single-stage units are made in sizes having piston displacements of 28 to 1,084 cubic feet per minute at discharge pressures of 15 to 160 pounds to the square inch. The multistage units provide for discharge pressures up to 1,750 pounds.

The vacuum pumps are single-stage machines that differ from the compressors only in the vacuum cylinder. With intake closed, they will pull 28 to 29 inches of vacuum referred to a 30-inch mercury column.

TRADE LITERATURE RECEIVED

The Kewanee Boiler Corp., Kewanee, Ill., is sending out a reproduction of part of the letters patent issued in 1873 on certain steam-boiler improvements to show that some so-called modern styles of boilers are in reality old-fashioned.

The Celite Products Co., New York, Chicago and Los Angeles, is mailing a new specification sheet for architects and engineers covering the use of Celite in concrete, along with a discussion of the water-cement ratio as applied to Celite mixes.

"Building Better Pumps" is among interesting articles in the current issue of Inco, published by the International Nickel Co., New York.

How uncertainties of oil hunting have been reduced is told in an article on "Taking the Guesswork from the Petroleum Industry" in the May number of The Yellow Strand, published by the Broderick & Bascom Rope Co., St. Louis, Mo.

A new bulletin issued by the Trico Fuse Manufacturing Co., Milwaukee, Wis., besides describing Trico powder-packed renewable fuses, contains engineering data and tests on overload time-lag and watt-loss saving.

The current number of Heat Engineering, published by the Foster Wheeler Corp., New York, contains interesting articles in the field of thermodynamics.

TORCH IS CONVERTIBLE

The new Milburn Combination Cutting and Welding Torch Type TI is announced as another step forward in speeding up welding and cutting operations and in saving labor and gases.

To change from cutting to welding it is not necessary to change the tip. A convertible feature of the tip changes it from a cutting to a welding tip or vice versa by a mere turn of the tip. In one position the gases are automatically passed through the preheating gas passages while the high pressure oxygen is carried through the central hole for cutting.

In the next position, made by a quarter turn of the tip, the cutting oxygen is cut off and the welding gases are conveyed through the central passage of the cutting tip, making a perfect welding flame.

GASOMETER HAS GOOD POINTS

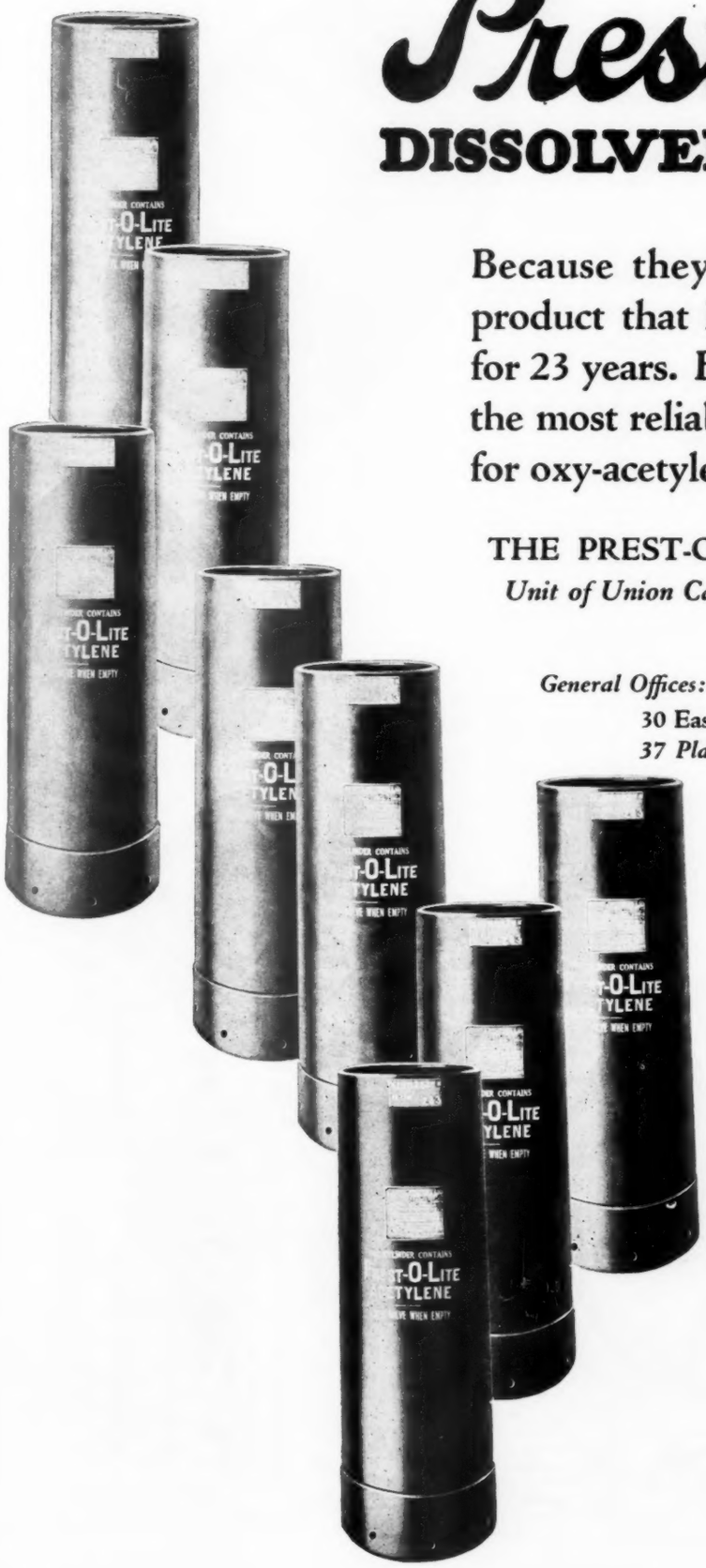
The Rotary Supply Co., Los Angeles, Cal., has introduced a new type of gasometer, the Rosco, which is said to have features assuring a high degree of efficiency. The Rosco Gasometer combines a reducing valve, a sediment trap, pressure regulator, and a storage capacity of 3 cubic feet at 2 ounces pressure. It has only two moving parts, one of which is the diaphragm. It is said to save time, pipe and fittings and to insure gas reaching the throttle box of the engine, unless gas line is actually turned off.

FOR EXPLOSIVE ATMOSPHERES

A line of both alternating and direct-current motors, built for application where explosive gases, fumes or dust are present, is announced by the General Electric Company. These motors have been approved (as a result of tests) by the Underwriters' Laboratories for operation under such conditions. The announcement of the complete line marks the culmination of several years of successful application in individual sizes and rating. The motors bear the General Electric designation "Class BU Form JA" and are of a totally enclosed design.

People keep right on buying

Prest-O-Lite
DISSOLVED ACETYLENE



Because they have confidence in a product that has been manufactured for 23 years. But mainly because it is the most reliable and economical fuel for oxy-acetylene welding and cutting.

THE PREST-O-LITE COMPANY, INC.
Unit of Union Carbide and Carbon Corporation

UCC

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Now Comes the *Roller Bearing Bessemer Engine!*

A NEW and Finer Oil Field Engine! A Four-Cycle power plant of the utmost simplicity. A brute for abuse—built with such strength that they don't know what wear-out means.

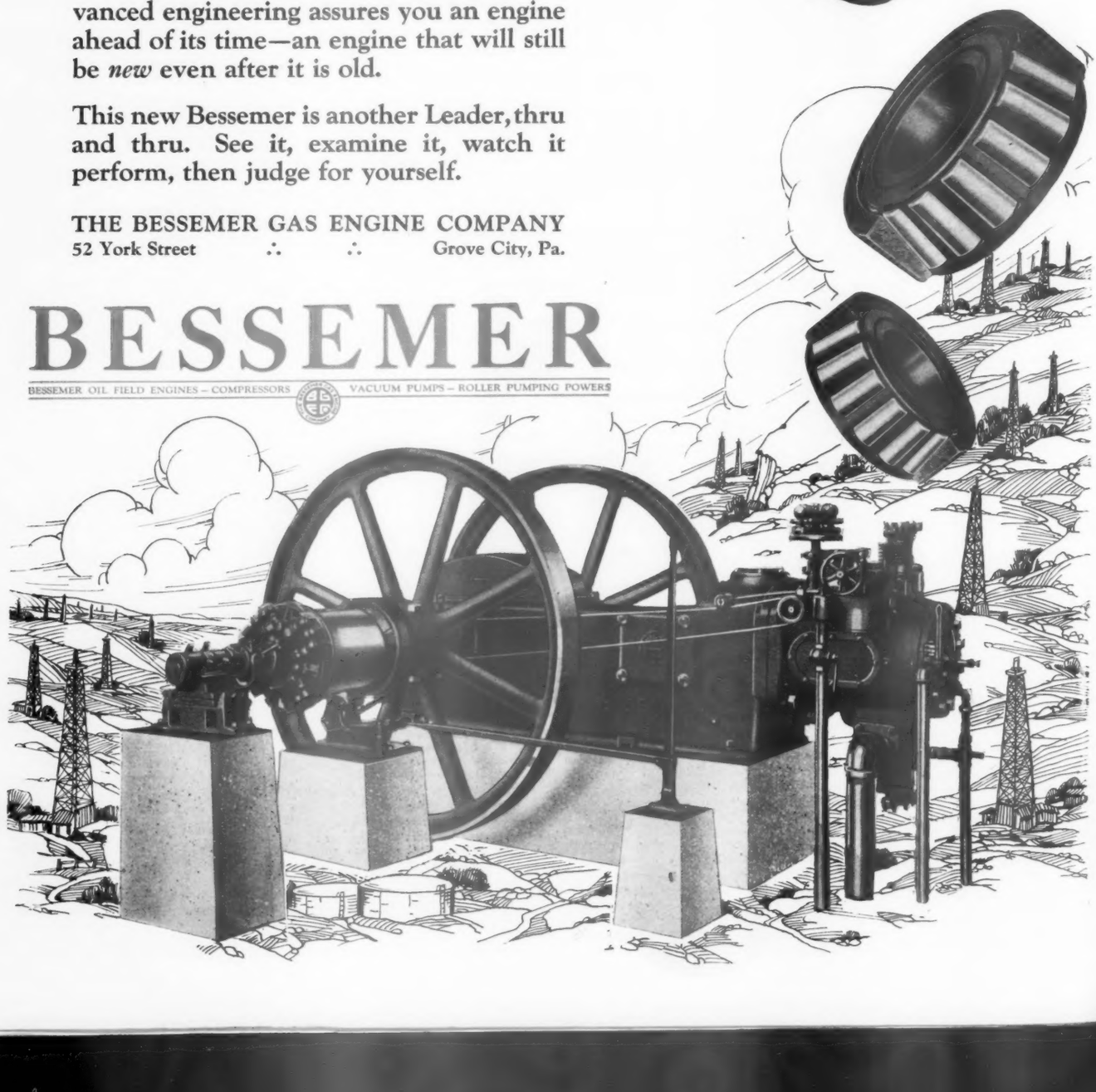
Crankshaft, layshaft and governor turn in adjustable roller bearings which minimize friction loss. Cross-head construction lengthens cylinder life by years. Oversize, overstrength parts make servicing negligible. Precision machine work means smooth, attentionless performance. Advanced engineering assures you an engine ahead of its time—an engine that will still be *new* even after it is old.

This new Bessemer is another Leader, thru and thru. See it, examine it, watch it perform, then judge for yourself.

THE BESSEMER GAS ENGINE COMPANY
52 York Street ∴ ∴ Grove City, Pa.

BESSEMER

BESSEMER OIL FIELD ENGINES – COMPRESSORS VACUUM PUMPS – ROLLER PUMPING POWERS



Surprising Showing In Steel Statistics On Tubular Goods

By B. E. V. Luty

PITTSBURGH, Pa., May 14. — Official statistics of steel production in 1927 have just been issued and furnish quite a surprise as to tubular goods, the showing in several details being quite different from what one was led to expect from the trade talk during the year, which was along the line that demand for oil country goods was very poor, the condition being mitigated to an extent by heavy demand for line pipe, while demand for standard or merchant pipe kept up. The previous year had been referred to as a very good year.

The net result, as now disclosed by the official statistics, is that from 1926 to 1927 production of all oil country goods, welded and seamless and including line pipe, decreased only 0.8 per cent, while production of standard pipe decreased 8.9 per cent and boiler tube production decreased 13.1 per cent. Total production of all tubular goods, welded and seamless, decreased 4.7 per cent. As the total production of all rolled iron and steel decreased 7.4 per cent, tubular goods made a particularly good showing.

During the year oil country goods went off 10 per cent while standard pipe went off 5 per cent, and at the beginning of last month standard pipe was advanced 5 per cent, putting it back, while oil country goods have not advanced.

Last year's production, in gross tons, was as follows:

	Welded	Seamless
Black, standard	1,237,783	14,317
Galvanized, standard	438,232	2,030
Oil country goods	1,199,936	561,002
O. D., etc.	144,515	34,420
Mechanical tubes	0	95,166
Boiler tubes	46,985	157,205
Total	3,117,451	864,140

The decrease from 1926 to 1927 in standard pipe and tubes was as noted above 8.9 per cent. Welded oil country goods decreased 9.7 per cent, but seamless oil country goods increased 25.8 per cent, making a decrease for the combined product of 0.8 per cent. Outside diameter and miscellaneous increased 31.9 per cent in welded and decreased 16.3 per cent in seamless. Mechanical tubing, only a seamless product, decreased 9.3 per cent. Welded boiler tubes decreased 22.8 per cent and seamless 9.7 per cent, making 13.1 per cent decrease in all boiler tubes.

Total of all welded tubular goods showed a decrease of 8.4 per cent while the total of all seamless increased 11.5 per cent, making the combined welded and seamless, 3,981,591 tons, 4.7 per cent under that of 1926, which was record high.

A difficulty in the pipe trade is that capacity increased very considerably in 1924 and 1925, particularly in the latter year, there being 14 butt weld and 5 lap weld furnaces built, while within the past six months the Bethlehem Steel Co. has completed a pipe mill at Sparrows Point, new Baltimore. General demand has grown so slowly in the past few years, and there is such a trend towards seamless tubes for some uses, that the increased welding capacity does not seem to be altogether needed.

Conditions in the tubular goods trade have shown no particular change in the past week. Much line pipe, for gas lines, is more or less in prospect. Demand for well material remains light. Shipments of standard pipe hold up fairly well, but there had been an extra movement in April, on account of the price advance.

The steel industry as a whole did particularly well in April, production being at a shade higher rate than in March, when for four years previous March had been the high month, with distinct decreases in April. The rate of production at present is off somewhat from that of April, but is well above that of a year ago. Indications from this sustained rate of production is that the summer dip will be milder than usual. Prices are not particularly strong, but show no recessions.

Tank Car Concerns Believed to Have Turned the Corner

NEW YORK, May 14.—Tank car companies have "turned the corner" and the loss in business incidental to curtailment of shipping operations on the part of the petroleum industry last year bids fair to be made up by heavier movement, according to reports in trade circles.

The improved conditions now benefiting the tank car companies were summed up by Elias Mayer, vice president and secretary of the General Tank Car Corp., who said:

"In all directions the future of our business looks brighter than it ever has in the company's history. From present indications the earnings of last year will be maintained this year and probably substantially exceeded, but of course it is early in the year to make any confident predictions of earnings. Much may happen, but the outlook now is very favorable.

"I look for no diminution in the movement of oil this year. Overproduction has found its solution by means of storage and not by movement. I do not believe that the trend of oil production will affect the movement of our cars unless it gets to such a low point as to be unable to meet demand, since the movement of tank cars is governed by the demand for oil and not by the supply. In any event, should the movement of oil ever fall off through shrinkage in supply, the margin of profit to producers and refiners will rise as the supply of oil decreases and our rental rates will be better, to say nothing of some saving in maintenance of cars with a lessened movement.

"During the past two months demand has been steadily increasing due to seasonal influences. This seasonal movement in preparation for the opening up of highways and greater use of automobiles is, I should say, just a little bit better than normal."

INTERIOR DELIVERIES INCREASING MATERIALLY

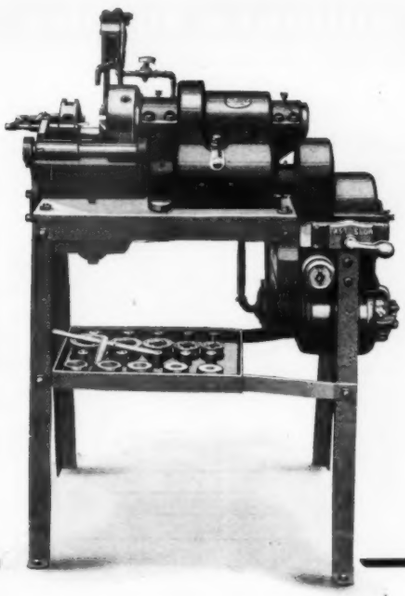
OIL CITY, Pa., May 12.—Interior deliveries of crude oil by the National Transit Co., are increasing materially and the April business along this line is expected to have established a new record, stockholders of the concern were told at the annual meeting here by the president, F. D. Williams, who told of the purchase during the year of the gathering lines of the Pure Oil Co., 659 miles of gathering lines and 75 miles of trunk system. He said the amount of oil run at first was about 700 bbls. a day through these lines but since the first of the year this business has averaged 1,000 bbls. a day.

In connection with the work of the National Transit Pump & Machine o., he said that new hot oil pumps and a 175-horsepower compressor engine have been developed along with a smaller compressor unit of about 8-horsepower for use on individual gas wells.

At the annual meeting of stockholders of the National Transit Co., the following were re-elected: F. D. Williams, president; C. E. Martin, L. C. Longaker, C. T. McClintock, J. H. Contino, T. L. Blair, and F. G. Zimmerman, directors. At a directors' meeting the following officers were elected: C. E. Martin, vice president; F. G. Zimmerman, secretary; L. C. Longaker, treasurer; B. L. Wood, assistant secretary; and J. H. Contino, assistant treasurer.

LEW WENTZ ILL

PONCA CITY, Okla., May 12.—Lew Wentz left this week in charge of a physician and trained nurse for some unannounced seclusion spot to recuperate, and he will be away several weeks, perhaps months. Stricken with an attack of influenza over six weeks ago, Mr. Wentz continued to take care of his various activities.



SPEED PLUS—

WITH A "TOLEDO" NO. 1000M.

Just 13 seconds to thread ½" pipe; 8 seconds to cut it off; 16 seconds to thread 1" pipe; 10 seconds to cut it off; 30 seconds to thread 2" pipe and 15 seconds to cut it off. Actual working figures that can be reproduced regularly with the "TOLEDO" No. 1000M power pipe machine. Instant change from cutting to threading and vice versa. Instant change of dies from one size to another. Pipe is reamed as thread is cut, chamfered as it is cut off. Easy and quick chucking of pipe. These are only a few of the many features of the "TOLEDO" No. 1000M high-production pipe machine for ¼" to 2" pipe. It is equipped with a Universal motor that will operate from a lamp socket on any 110 volt current. One of these machines will soon pay for itself wherever small pipe is cut or threaded.

WHEN YOU WANT RESULTS SPECIFY "TOLEDO"

TRADE-MARK

THE TOLEDO PIPE THREADING MACHINE CO., Toledo, Ohio

NEW YORK OFFICE, 72 LAFAYETTE ST.

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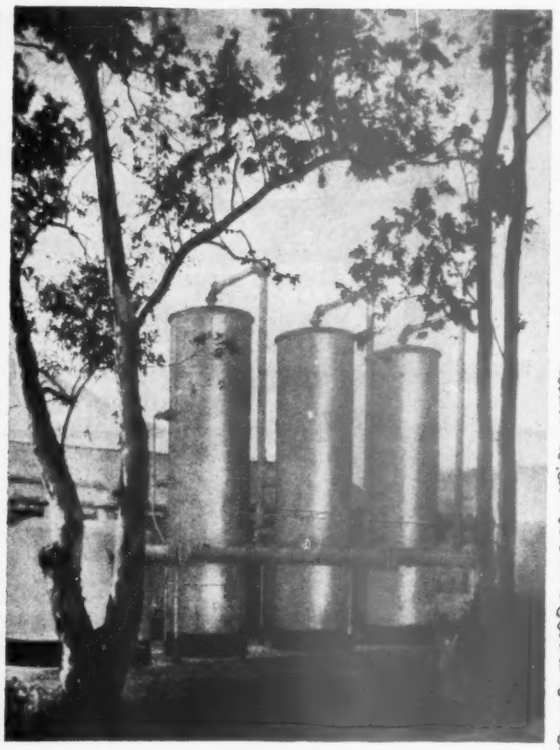

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Campbell
Oil-Froth Absorbers

KANSAS WILDCATS

(Continued from Page 44)

Phillips Pet. Co.'s No. 1 Grayler, SE cor. NW, Sec. 11-14-4 ..... Dry and abandoned 2,218 ft

ELLIS COUNTY

Derby Oil Co.'s No. 1 Weigel, C NW, Sec. 25-2-17w ..... Casing 2,745 ft.
J. H. Tatlock et als' No. 1 Leiker, NW cor. NE NE, Sec. 26-13-16w ..... Dry and abd., 3,507 ft.

GEARY COUNTY

Pioneer Oil Co.'s No. 1 Chase, SE cor. SE, Sec. 10-12-7 .. Drlg., 2,089 ft.

GRAHAM COUNTY

Gulf Coast Oil Co.'s No. 1 Johnson, SE cor. NE SW, Sec. 27-3-25w ..... S.D., 3,460 ft.

GREENWOOD COUNTY

Eureka Oil Co.'s No. 1 Brothers, SE cor. NW, Sec. 35-23-11 ..... Drlg., 2,489 ft.
Roth & Faurot's No. 1 Elmke, NE cor. NW Sec. 14-32-3 .. Rig.
C. A. Devine's No. 1 Bradford, SW cor. NE Sec. 22-26-11 S.D., 600 ft.
Hanley et als' No. 1 Peterson, NW cor. NE SE, Sec. 4-26-13 ..... Drilling 800 ft.
R. H. Hood et als' No. 1 Butler, C SE SE Sec. 15-26-11 .. Drlg., 900 ft.
T. C. Johnson's No. 1 Knox, NE cor. NW, Sec. 3-23-13 .. S.D., 1,705 ft.
Kismet Oil Co.'s No. 1 Richardson, SW cor. NE SW, Sec. 26-23-11 ..... Location.
O. W. Culy et al's No. 1 Hoover, NE cor. SE, Sec. 15-27-13 ..... Drlg., 600 ft.
Rockhill et als' No. 1 Jones, SW cor. NE, Sec. 21-26-13 .. Rig.
Sharpless et als' No. 1 Corper, SW cor. SE SE, Sec. 22-23-12 ..... S.D., 1,310 ft.
Smith & Rockhill's No. 1 McDair, NW cor. SE Sec. 20-26-12 ..... Dry and abd., 1,908 ft.

HARPER COUNTY

Amerada Pet. Corp.'s No. 1 Mendiville, C SE SE, Sec. 24-34-6w ..... Drilling 5,024 ft.
Sam Jarvis' No. 1 Wyckoff, SW cor. NW Sec. 11-34-4w .. Drilling 4,630 ft. cave.
Sam Jarvis' No. 1 Warneke, SE cor. SW Sec. 4-34-3w .. S.D., 4,207 ft.

HARVEY COUNTY

Roxana Pet. Corp.'s No. 1 Haury, NE cor. SW SE Sec. 11-23-2w ..... Drilling 1,010 ft.

JEFFERSON COUNTY

Wichita Oil Co.'s No. 1 Simpson, NW cor. SW SW Sec. 19-10-17 ..... Rigged up and S.D.

KINGMAN COUNTY

James Madison's No. 1 Ballein, SW cor. NW NW Sec. 21-28-5 ..... Drlg., 3,680 ft.

LANE COUNTY

Robinson et als' No. 1 Dickerson, SW cor. NW SE Sec. 11-18-27w ..... S.D., 2,625 ft.

MARION COUNTY

Anderson Bros.' No. 1 Benth, SE cor. SW SW Sec. 31-18-5 Dry and abd., 2,620 ft.
Franks et als' No. 1 Wright, SW cor. NW NW Sec. 9-14-4. Rig.
Givens et als' No. 1 Ucker, SW cor. NE, Sec. 31-17-4 .... U.R., 1,320 ft.
Graham Bros.' No. 1 Nelson, NE cor. SE, Sec. 30-17-5 .... Sand, 2,295-2,380 ft; pumping 30 bbls; completed.
T. C. Johnson's No. 1 Thompson, SW cor. NE, Sec. 26-17-4 ..... Chat, 2,329-41 ft; fish csg
Raymond Gear's No. 1 Larson, NW cor. SW NW Sec. 13-21-4 ..... Drlg., 600 ft.
Shearer & Reardon's No. 1 Strouse, SW cor. NW NE, Sec. 14-13-4 ..... Drlg. 1,285 ft.

MEADE COUNTY

Blackwell O. & G. Co.'s No. 1 Beyer, SE cor. NW SE, Sec. 9-33-28w ..... Drilling 3,710 ft.

MITCHELL COUNTY

Ben Gurley et als' No. 1 Crombil, C NE NE, Sec. 32-9-7w ..... Spudded and shut down.

MORRIS COUNTY

Cress & Hawley's No. 1 Grendier, NW cor. SE, Sec. 16-15-5 ..... Fish. tools, 1,400 ft.
Hugh Faulder's No. 1 Wendt, SW cor. SE SE, Sec. 18-15-5 ..... Rig and tools.
Fisher & Louck's No. 1 Stroda, NW cor SE, Sec. 6-16-5 .. Dry and abd., 2,659 ft.
Franks & Farrell's No. 1 Wendland, SW cor. SE NE, Sec. 20-16-5 ..... Drlg., 1,820 ft.
Graham Bros.' No. 1 Nelson, NE cor. SE Sec. 30-17-5 .... Drlg., 1,600 ft.
Matthews et als' No. 1 Walters, SW cor. NE, Sec. 14-15-5 Drlg., 1,585 ft.
Moss & Nelson's No. 1 Smith, SW cor. SW, Sec. 18-16-5 .. Rig.
Skelton et als' No. 1 Iles, NW cor. NW, Sec. 25-16-5 .... Rig.

McPHERSON COUNTY

Phillips Pet. Co.'s No. 1 Wright, SW cor. NW NW, Sec. 9-19-4 ..... Drlg., 1,740 ft.
D. L. Hall's No. 1 Gray, NW cor. SE NW, Sec. 20-20-3w .. Spudded and S.D.
John Heron's No. 1 Vosshell, NE cor. NE Sec. 9-21-3w .. Drlg., 635 ft.
C. W. Lamer's No. 1 Lamer, SE cor. SW, Sec. 1-17-3w .... U.R., 3,495 ft.
Gurley & Lamer's No. 1 Paulsen, SE cor. NW, Sec. 6-19-2w ..... Sand 2,327-40 ft., 25 bbls. show, drilling 2,520 ft.
The Texas Co.'s No. 2 Chinberg, NE cor. NE NW, Sec. 32-18-2w ..... Sand, 2,343-77 ft; swbd., 25 bbls.

OSBORNE COUNTY

Prather-Davis-Krueger's No. 1 Pruter, SW cor. SE, Sec. 30-9-15w ..... Drlg. 2,900 ft.

PAWNEE COUNTY

Frank Hopper et als' No. 1 Seifers, NW cor. SW NE, Sec. 23-21-11w ..... S.D., 4,170 ft.
F. C. Troupe's No. 1 Lovett, CEL SW NE Sec. 31-21-16w T.D., 1,700 ft.

POTTAWATOMIE COUNTY

J. J. Crawford's No. 1 College, CWL SW NE, Sec. 11-10-12 S.D., 2,250 ft.

RENO COUNTY

Danciger O. & R. Co.'s No. 1 Williams, NW cor. SE SE, Sec. 6-22-4w ..... Moved in tools.

RICE COUNTY

Allison & Fitzwilliams' No. 1 Poland, NE cor. SW NE, Sec. 36-19-3w ..... Cellar.

RILEY COUNTY

Mutual Oil Co.'s No. 1 Marks, SE cor. NE NW, Sec. 26-10-6 ..... S.D., 2,400 ft.

ROOKS COUNTY

J. C. Findeiss' No. 1 Catudal, NW cor. SE SE, Sec. 23-10-19w ..... Rig.
Keys Pet. Co.'s No. 1 Rathburn, NE cor. SW, Sec. 14-9-16w ..... S.D., 3,030 ft.
Krueger et als' No. 1 Poore, NE cor. NE, Sec. 14-8-16w .. Spudded and S.D.
Stearns & Streather's No. 1 Matheson, NE cor. SE NW, Sec. 23-10-16w ..... Drlg., 3,479 ft .

RUSH COUNTY

Valerious & Chenney's No. 1 Sheverman, NW cor. SE NW, Sec. 27-17-17w ..... Spudded and S.D.

RUSSELL COUNTY

Douglas Oil Co.'s No. 1 Stoppel, SE cor. SW NE, Sec. 25-14-11w ..... Drlg. 1,100 ft.

SALINE COUNTY

Mente O. & G. Co.'s No. 1 Muir, SW cor. SW, Sec. 17-15-2w ..... U.R., 3,205 ft.

SEDGWICK COUNTY

Bu-Vi-Bar Pet. Co.'s No. 1 Wright, SE NE SE, Sec. 12-26-1w ..... Drlg., 1,775 ft.

SEWARD COUNTY

T. B. Slick's No. 1 Pyle, NE cor. NE, Sec. 14-33-33w .. S.D., 3,200 ft.

SHERMAN COUNTY

A. L. Henson et als' No. 1 Murry, NE cor. SE NW, Sec. 22-7-4w ..... Drilling 2,810 ft.

SMITH COUNTY

Smith & Buchner's No. 1 Rice, SW cor. SW, Sec. 18-5-15w ..... Rig.

STRATFORD COUNTY

Kismet Oil Co.'s No. 1 Richards, SW cor. NE SW, Sec. 24-22-11w ..... Location abd.

SUMNER COUNTY

Helmerich & Payne's No. 1 Broadhurst, SE cor. NE NE, Sec. 15-33-2e ..... Drilling 900 ft.
Otstot et als' No. 1 Barlow, SE cor. SE, Sec. 22-23-3w .. S.D., 1,360 ft.
Gypsy Oil Co.'s No. 1 Douglas, NE cor. SE NW, Sec. 23-34-2w ..... Top Wilcox, 4,493 ft; T.D. 4,500 ft; estimated 200 bbls; S.D.

TREGO COUNTY

Central Commercial Oil Co.'s No. 1 Ellis, NE cor. SW NE, Sec. 20-12-21w ..... Spudded and S.D.

WABAUNSEE COUNTY

Empire G. & F. Co.'s No. 1 Schuaem, SE cor. SE, Sec. 19-12-11 ..... Fish., 3,320 ft.

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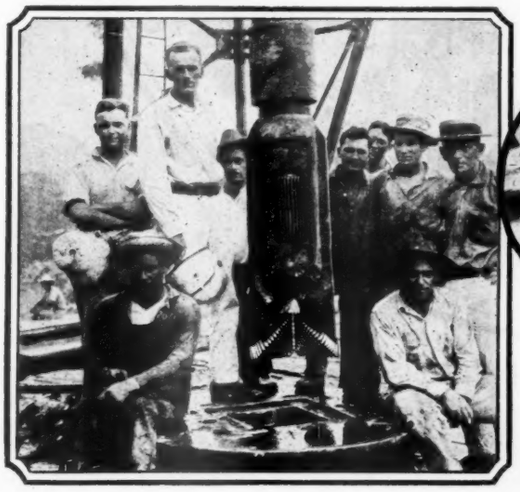

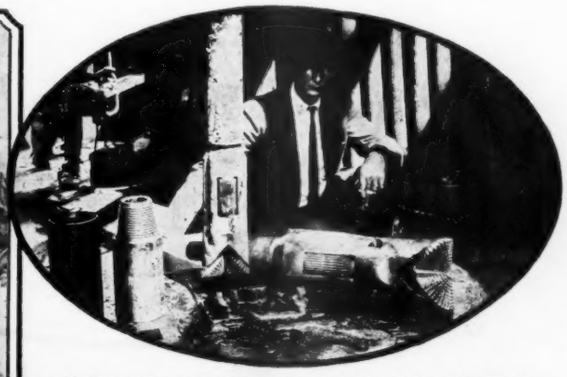

Hughes Simplex Rock Bits and Chrome Nickel Steel Forged Tool Joints used in drilling world's deepest oil well (7,591 ft.) at Athens, California.

Hughes 16-inch Rock Bit manufactured by Hughes Tool Co., Houston, Texas. Main body made of Chrome Nickel Cast Steel.

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PRESIDENT HOLMES REVIEWS OPERATIONS

Reviewing The Texas Corporation 1927 operations, President R. C. Holmes says $37,257,212 was invested in new properties and additions. Producing department led with $15,908,199; refineries were next with $9,000,152, and domestic sales third with $6,955,887 for new facilities. Balance was spread among pipe lines, export and other departments.

Though the producing department obtained 26,075,864 bbls. of crude from domestic properties, 5,065,665 more than in 1926, the realized price averaged $0.5797 less a barrel. Oil acreage held at the end of the year was 2,727,983 acres, increase of 473,414 acres. Drilling was restricted wherever possible and, he says, "we feel that on the whole this department has improved its position materially during the year."

Overproduction of both crude oil and gasoline in California contributed materially to low prices, Mr. Holmes states, pointing out that 10,759,406 bbls. of California gasoline were brought to the Atlantic Coast in 1927, nearly 3,000,000 bbls. more than in the previous year.

In view of low gasoline prices, The Texas Corporation ran as much heavy crude as possible. It increased storage of light crude oils at low prices by 5,259,311 bbls. and reduced heavy crude stocks 2,170,247 bbls., leaving net gain of 3,089,064 bbls. in crude storage.

Even with this larger proportion of heavy crudes run, refinery department made a new record for gasoline recovery. Runs of 38,466,947 bbls. were 2,228,884 bbls., 5.15 per cent, larger than in 1926, while refineries increased gasoline yield 2,235,673 bbls., or 13.72 per cent, to a total of 18,528,887 bbls. This recovery represented 46.73 per cent on crude oil run compared with 44.38 per cent recovery in 1926, even though 30 per cent of crude run was heavy grade with little natural gasoline.

Following table gives a comparison of gross crude oil production, in barrels:

	1927	1926
North Texas	4,060,477	3,590,535
N. Cent. and W. Texas	2,248,046	949,345
So. and Cent. Texas	5,411,423	5,466,066
Louisiana	1,971,135	1,440,833
Arkansas	2,222,401	2,690,738
Oklahoma	7,519,295	4,448,435
Kansas	1,070,484	450,838
Kentucky	322,189	237,922
Wyoming	251,575	368,786
Colorado	981,983	1,338,661
New Mexico	15,856	27,040
Total in United States	26,074,864	21,009,199
Mexico	386,819	509,186

Royalty and other outside interests averaged 16.4 per cent in the United States last year and 16.8 per cent in 1926; in Mexico they were 20.2 per cent last year and 20.5 per cent in 1926.

The Texas Corporation also purchased 22,859,194 bbls. of crude in the United States last year, 1,668,987 more than in 1926; Mexican crude purchases of 1,548,052 bbls. were 832,823 less than in 1926, while no purchases were made in Venezuela against 67,886 bbls. in 1926.

The Texas Corporation operated 2,554 miles of trunk pipe lines with necessary gathering, telephone and telegraph systems. The lines moved 39,939,655 bbls. an increase of 4,988,631, with deliveries to refineries of 33,925,506 bbls., a gain of 4,386,201. Crude transported for others totaled 3,512,813, about half the 6,734,814 so moved in 1926.

Other income was an important 1927 item. Revenue from Hoskins Mound property, operated by Freeport Sulphur Co., was $1,909,618 against $981,943 in 1926. Another $2,500,000 of income arose from sale of interest in Reserve Natural Gas Co. and Marshall Gas Co., West Texas natural gas system, and bonus on leasing to others of sulphur rights at Boling and Clements domes.

Stockholders increased materially, from 31,003 to 39,319, at which point they were the most numerous on record. Only 16.24 per cent of the total stock issue was held by 414 brokers end of 1927; men stockholders numbered 22,979 and held 47.55 per cent of the total, while 14,684 women held 23.27 per cent of the shares. Balance was held by corporations, banks, fiduciaries and estates.

ENGINEERS AND GAS MEN CAN CO-OPERATE

(Continued from Page 64)

business depends upon there being a supply of gas available for distribution. However, the apparent immediate decrease in revenue will ultimately result in a greater return on the investment because of the longer use for installations and increase in total revenue because of the marketing of conserved gas at a later date.

This paper is not concerned with the strides made in the natural gas industry, but it will do no harm to state that the gas industry has made more rapid strides than the oil industry in co-operation and in working out difficulties common to all gas companies. Too much credit cannot be given to those in the natural gas industry who have brought about and taken part in the development of such a really wonderful system of co-operation. They are to be highly commended for the exchange of company information so that all might benefit. The value of such work is only too evident to those interested. As to its monetary value, the fact that the work is being carried on in increasing volume and scope is very good evidence that it must have an economic value otherwise the work would be greatly curtailed.

Co-operation with Oil Companies

It is for this reason that so much has been accomplished by the gas companies, that this paper has been written because close co-operation with the oil companies offers itself as a very logical step in the development of the natural gas industry. Both will be combating a common enemy, namely the waste of a natural resource that cannot be renewed. United effort should certainly accomplish greater results.

In order to point out a possible solution, a brief review of the development in the oil-producing methods will aid in establishing a basis for co-operating along the lines most equitable to both industries. As was previously pointed out, the general tendency now is to maintain the gas in the sand as long as possible. This is accomplished by regulating the daily production of oil so that the minimum volume of gas is produced with each barrel of oil; by injecting gas into the sand through key wells as soon as the pressure in the sand has declined sufficiently to do so economically, and by repressuring depleted oil sands from which practically all of the gas has been removed. To show the general trend in producing methods, attention is directed to the change in policy as regards the use of vacuum in oil production. The reason for this is apparent when it is realized that in general, whenever vacuum is effective, the gas production is increased in greater proportion. The result is an increase in the viscosity of the oil in the sand and particularly in the sand adjacent to the wells.

Experimentally, it has been found that the largest recovery results when the gas initially held in solution in the oil in the sand is not produced at a rate faster than is necessary to propel the oil to the wells. A great deal can be accomplished by regulating the flow of oil and gas. However, even under the best producing practices, the recovery would probably never exceed 50 per cent of the oil originally contained in the sand. This of course applies to those sands in which the energy is furnished by the gas. Where the movement of oil is largely due to hydrostatic pressure, the production may be greater. It is now believed that a maintenance of pressure in the oil sand will result in a greater recovery than by repressuring after the pressure has been practically exhausted.

Oil Production and Gas

What effect does the rate of oil production have upon the volume of gas available for distribution? One need only consider the natural gas business in California to realize that the life of the business there depends to a large extent upon the oil-producing methods. Approximately 10 per cent of the gas marketed during peak load periods is obtained from strictly gas wells, the remainder being residue gas obtained from gasoline plants.

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When all of the available residue gas is utilized, any change in oil-producing methods resulting in a decrease of gas produced from the sand will decrease the quantity available for distribution. This presents one condition which must be taken into account. In the final analysis, the rate of gas production is slowed down but eventually it may be utilized. On the other hand, when the gas produced is in excess of that which is consumed, any method of oil production which will result in a slower rate of gas production, adds to the supply available for distribution at a later time.

Considering the various changes in oil production methods by means of which the gas production is held in check, a survey of these various methods will show in what way the gas companies may co-operate with the oil producers in conserving the gas. One of the simplest forms of conservation during flush production periods is to entirely shut in a field. This method is employed in fields that have been depleted to the pumping stage. There are some exceptions to this general rule as for example instances where only one company may control the entire field in which event fields where many of the wells were still flowing have been shut in entirely. However, to close in production in a field does not mean that the casinghead gas should be produced to operate casinghead gasoline plants as has been done, for not only is the gas produced wasted, but also the ultimate oil production is decreased by this practice.

In what way may the gas companies be of assistance when the latter practice is in use? By calling the attention of the oil operators to the actual loss in dollars and cents when the gas is not utilized, and also to point out the effect on the ultimate recovery of oil. In certain cases it might even be advisable to utilize the gas company's compressor equipment in the field for returning the gas to the oil sand if such method is feasible. A plan may be worked out whereby the oil operators may agree to pay the cost of compression, or, by entering into an agreement with the operators whereby the cost of compression will be deducted from the gas when marketed. There are any number of ways in which the gas may be conserved, the most important point is to accomplish it.

Another conservation measure would be to shut in those wells which are abnormal gas producers as is now being done in the Ventura Avenue Field in California. The oil companies operating in the field have shown what can be done to eliminate the blowing of gas to the atmosphere. Incidentally, it is certainly good business on the part of the operators to conserve the gas for every foot of gas saved can be sold at a later time.

The present method of operating fields in Russia suggests itself as the ideal way to produce the oil. A sufficient number of wells are drilled to outline the structure. Wells lowest on the structure are produced first and those wells already drilled up structure are shut in. Whells high on the structure are usually the most prolific gas producers and are the last wells to be placed on production. Such a method of producing oil would go a long way towards reducing gas waste and increasing the ultimate recovery of oil. Of course the problem is simplified in Russia because all fields are produced as a unit.

Production Methods

Next let us consider those fields which are produced under normal operating conditions. The wells may be operated with a view towards conserving the gas and increasing the ultimate production of oil. They may be operated in such a manner as to bring as much oil as possible to the surface in the shortest possible time irrespective of the effect on the ultimate production of the oil or the volume of gas produced. Here the gas engineer with his knowledge of gas may be of invaluable assistance to the oil producer and at the same time be working for the conservation of gas. There is plenty of work for the gas engineer in the producing end of the oil business. In the future, an oil production man's success will be proportional to his knowledge of the natural laws pertaining to gas. If the energy of the gas is essential in propelling the oil to the wells, it follows that the laws relating to gas are essential to obtain maximum efficiency. The gas companies can be of assistance by carrying on as much missionary work as is possible in the field. Incidentally the gas engineers carrying on this work will be continually on the lookout for ways and means whereby the wastage of gas can be reduced to a minimum.

What effect will the use of the gas lift have upon the quantity of gas available for distribution? An investigation dealing with the methods of application are essential before such a question can be answered. Experience has shown that the natural gas factor, that is, the number of cubic feet of gas produced from the formation with each barrel of oil, may be either increased or decreased. Here a knowledge of the gas laws is of essential importance in successful gas lift operation. The quantity of gas available for distribution is therefore dependent upon the methods of gas lift operation. When there is not sufficient gas initially available to start gas lift operations, air is used. The gas produced from the sand thus becomes mixed with the air, hence is not conserved. Where possible it would be advisable for a gas company operating in the district to furnish sufficient gas to start operations. Once started, the gas produced from the sand and pumped into the well can be used for recycling. However, all of the gas will not be required to lift the oil and a certain volume becomes available for distribution. Possibly the gas company has no immediate use for the gas, hence might hesitate to lay lines or furnish the gas necessary to begin operations at an industrial rate. It was pointed out early in this article that co-operation calls for a certain amount of give and take. While any one project might prove profitable, it would be good policy to make the necessary installation and thus pave the way for co-operation on other projects. In as much as the two industries have so much in common, anything which will tend to bring about close co-operation will be of mutual benefit to both.

Maintaining Pressure

The maintenance of pressure method gives promise of becoming one of the most important methods for increasing the ultimate recovery from an oil sand. It is still too early to state whether it will become a universal practice. At any rate, its importance with respect to the distribution of natural gas is readily recognizable. Essentially, the method consists in introducing sufficient gas into the producing sand to maintain the pressure in the sand. During the initial stage in production, it may not be economically feasible because of the high reservoir pressure. Some proponents seem to think that the pressure should be maintained from the start. Whether this would be justified seems doubtful at the present time.

The repressuring method as implied by the name, consists in attempting to build up the pressure in a sand sufficiently to bring about an increase in production in a field that has been practically exhausted by ordinary producing methods. In so far as the gas companies are concerned, the adoption of the maintenance of pressure method means that the quantity of gas available for distribution is decreased by the amount returned to the sand, and a certain amount required for fuel required to boost the gas to high pressures. During periods of overproduction of gas, the method eliminates waste. In repressuring there is usually a lack of gas for injection purposes. This method offers an outlet for excess gas from other sources that may be later drawn on for marketing. Unless a gas supply is made available, air is used.

The suggestion is here made that a joint committee consisting of members of the engineering section of the American Petroleum Institute and of the Natural Gas Department of the American Gas Association should be appointed to foster co-operative work between the two industries. The formation of such a committee would be of mutual benefit to both.

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Fig. 125
Iron Body Gate Valve (flanged)

Fig. 122
Iron Body Gate Valve (screwed)

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CHAMBER OF COMMERCE

HOUSTON, TEXAS

ROCKY MOUNTAIN AREA

(Continued from Page 55)

and the company which mines coal decided to drill for oil itself rather than lease its land for that purpose. Drilling will start in a 15½-inch hole and will be carried to 4,000 feet if necessary. Spudding is expected to start next week. Several completions and new locations were made this week. Wade Petroleum, Inc.'s No. 1 Robinson, SW NE, Section 3-19-70, reached the pay at 1,870 feet and is running casing to put on the pump.

The Continental Oil Co.'s No. 1 Dalfior, SE NE, Section 3-19-70, was completed as an average well at 2,265 feet. Same company's No. 1 Bromwell, NW SW, Section 3-19-70, was heralded in local papers as coming in for 864 bbls. a day. If true, it would be a wonder for that field, but the truth is that it is expected to make 25 or 30 bbls. It is bottomed at 2,095 feet and drilling a little deeper. The Texas Production Co.'s No. 1 Ott, NW SW SE, Section 3-19-70, was completed at 1,950 feet with an initial production of 30 bbls. This company has made three new locations as follows: No. 1 Rocjan, SW SW NE, Section 3-19-70; No. 1 Fullbright, SW SW NE, Section 3-19-70, and No. 1 Ratkovich, NE SW NE, Section 3-19-70. The Continental Oil Co. is starting two new wells in its No. 1 Jacobi, NW NW SW, Section 2-19-70, drilling at 450 feet, and No. 1 Brown, NE NE SE, Section 3-19-70, is rigging up. Raddatz, Vogel & Travis' No. 18 Rodney, NW NE, Section 28-20-69, in the south extension, found the pay at 2,075 feet and is being equipped for pumping.

La Plata County

The Royal Producers & Royalty Co. of New Mexico has made a location for a test on the SE NE, Section 27-33-12, on the Red Mesa Terrace in La Plata County. The location is a mile north of a well drilled in 1926 by J. A. Leidecker, a mile south and a little west of the Mesa Verde Oil & Gas Co.'s No. 1 Pulliam, 3½ miles southwest of a test drilled by the Ohio Oil Co., and 2½ miles northeast of a test drilled by the Miley Oil Co. Most of these wells had good showings, but no commercial production, and the new test has been located with knowledge obtained from the logs of the other wells. Frank A. Webber, formerly with the Midwest Refining Co., is in charge of the new operation. The company has purchased an interest in the equipment and rig used in drilling the Pulliam well, and contracted for the drilling.

A test to be drilled by the Matador Oil Co. of Texas, under a contract with the Giant Ledge Oil Co., on the Skull Creek anticline in the western end of Moffat County, will be watched with interest. The well has not yet been spotted, awaiting outcome of some lease negotiations, but will be in Section 15-4n-101. The geology was worked out by John W. McGee, and according to his reports, the test will start in the Weaver sand in the top of the Pennsylvanian formation. This is the first Pennsylvanian test undertaken in that area. According to McGee's reports, four sands will be tested, all in the Pennsylvanian, but no effort will be made to drill to the Madison lime as samples taken at outcrops indicate it is too crystallized to be worth drilling. The Shinarump forms an escarpment around the structure which is 18 miles long and 12 miles wide between the syncline on the south and the fault closure on the north, though the closing contour does not embrace that much territory. The dips on the south are rather steep, some of them being about 45 degrees, while on the west and east they are from 5 to 8 degrees. The presence and thickness of the sands is based on the log of the Big Six well at Moab, and on outcrops of the formation 15 miles to the north of Skull Creek, on the Bear (Yampa) River fault. Of the four sands exposed at the outcrop, the biggest one is 100 feet thick and lies about 300 feet above the base of the formation. A closure of 800 feet on the north and 1,500 feet on the south have been worked out, and the drainage area has been traced about 50 miles to the west extending over into Utah. It is expected that all four sands will be tested within 2,500 feet.

The Mountain States Oil Corp., the Mountain States Gasoline Corp., and the Great Dome Oil & Gas Co. are being consolidated into the first named company. The three interests, which are closely allied, control 5,600 acres on the Garcia, or Francisco structure in Las Animas County, upon which are eight wells, No. 5 Sandoval, SE NE, Section 4-34-62, is now drilling as a test to the Morrison sand. The wells are making gas from around 1,600 to 1,800 feet, part of which is used in a Campbell absorption plant owned by the joint interests.

Jackson County

The Continental Oil Co.'s operations in Jackson County show no material change. Its No. 1 Peterson, Section 1-9n-79, estimated to be making 50,000,000 feet of carbon dioxide gas and spraying oil from a total depth of 5,110 feet, and its No. 1 Hoye, Section 34-9-78, which is doing the same thing on a smaller scale, have been giving considerable trouble due to the extreme low temperature of the gas. Plans are to deepen both wells to the next horizon if possible. The Hoye well has been cleaned out after recovering the tools and may be the first to make new hole. In the Peterson well the operations are rather diversified and include some unique problems which will be interesting when the operators get time to tell about them.

In Moffat County, the Shaffer Oil & Refining Co.'s No. 205 Yarg, NW NW, Section 26-4n-92, on the Iles Dome, continues to hold first place in interest. Last week it was reported to have topped a sand in the Morrison at 3,730 feet showing some saturation through 2,400 feet of water. It was planned to cement the 6¼-inch before drilling in, but this was changed to carry the casing as deep as possible if nothing worth while showed up. Drilling ahead continued and at 3,775 feet it is reported to have encountered a true sand showing saturation. The 6¼-inch will be lowered to 3,773 feet and mudded and a test made. Little information is available as to what was found in the first horizon in the Morrison but apparently nothing to justify stopping at that point. The Midwest Refining Co.'s No. 7-SD, NW NW, Section 23-4-92, is drilling at 2,991 feet in red and gray shale, and its No. 8-SD-2, NW NW, Section 23-4-92, is cleaning out at 2,745 feet, the water having broken through. Same company's No. 33-SD, SW SE, Section 22-4-92, is drilling at 2,732 feet in gray sand and bentonite, and its No. 4-M Shaw, Section 27-4-92, is working on bit in the hole at 3,280 feet. The Texas Production Co.'s No. 13 Parkinson, NE SW, Section 22-4-92, is bottomed at 3,185 feet and underreaming the 8¼-inch at 3,160 feet, and its No. 6 Parkinson, NW NW, Section 23-4-92, is drilling at 3,042 feet. Same company's No. 17 State, NW SE, Section 15-4-92, is drilling at 3,501 feet, and is believed to be within 30 feet of the Morrison sand. The Alliance Oil Co.'s No. 1 Milliken, SW cor., Section 14-4 92, is fishing for bit at 3,000 feet.

In Rio Blanco County, the Texas Production Co.'s No. 1 Freeman, Section 27-3n-94, has underreamed the 6¼-inch to bottom at 5,567 feet where the string was set and it is now waiting for the cement to harden. It is bottomed approximately 300 feet off the Dakota sand.

In Baca County, the Marland Production Co.'s No. 1 Mesa, Section 8-30-50, is drilling in loose sand at 1,370 feet.

In Las Animas County, the Phillips Petroleum Co.'s No. 1 Haskins, Section 23-29-56, is trying to straighten bad hole at 1,685 feet.

In Jefferson County, near Denver, C. L. Woods and others' No. 1 Ted Knowles, Section 30-3s-69, is bottomed at 1,300 feet on a hard shell which is believed to be the cap rock over the first objective sand. The 10-inch is being run and will be cemented at 1,296 feet before drilling in. The Laramie formation was expected at about this horizon, followed by the Fox Hills at 2,000 feet. If these formations are found to have eroded before the overlying Arapahoe and Denver were deposited, the plans are to continue the test to the Dakota. The geology of the structure was worked out by Dr. F. F. Hintze, consulting geologist of Denver and formerly with the Producers & Refiners Corp.

Wyoming

The Utah Southern Oil Co.'s No. 3 Government, NE cor. SW, Section 29-56-97, on the Garland Dome, in Big Horn County, Wyoming, is reaching an interesting stage and will be closely watched for the next few weeks. The Garland Dome is less than 30 miles north of the Oregon Basin Dome and on the south extension of the Elk Basin anticline and ties in with the general uplift in that region. Structural conditions and operating results are very similar to those encountered on the Oregon Basin Dome. Gas has been found in the upper horizons in several tests, and efforts have been made for the past three years to drill through the gas belt and test the Embar and Tensleep formations in the Permian. These are the producing horizons at Oregon Basin. The Ohio Oil Co.'s No. 2 Gross Gas, NE cor., Section 33-56-97, drilled two years ago, though not the deepest well drilled, reached a lower structural horizon than any other. It was completed as a 40,000,000-foot gas well at 3,163 feet in what is supposed to be the lower Embar. The structure is about 10 miles long and 3 miles wide and has a closure of 2,600 feet and is considerably faulted. The Utah Southern test is about three-fourths of a mile northwest of the Ohio's well. This week it encountered a flow of 1,000,000 feet of gas in the Embar lime at 3,255 feet and was drilled to 3,263 feet when operations were suspended to mud off the gas before going any deeper. This has been done and drilling is being resumed. The gas was found at about the depth expected and more than 100 feet above where the large flow was found in the Ohio's well.

The next few weeks probably will disclose whether the Garland Dome is to be another Oregon Basin. One other test is drilling on the structure at this time this being the Producers & Refiners' No. 3 Government, NW NW, Section 24-56-98, a joint well with the Kinney-Coastal Oil Co. It is bottomed at 1,805 feet and at last reports was stripping out the 12½-inch casing. The Producers & Refiners recently went back into the Torchlight district, in the same county, and commenced drilling its No. 39, on Section 24-51-93, and at last reports it was showing for a well at 425 feet at which depth it was shut down to make a test of production.

Bates Hole

The Bates Hole country southwest of Casper, in Natrona County, in which are located several structures now being tested, is developing into quite an active territory and the interest was increased this week with the completion of the Spindletop Syndicate's No. 2 in the NW Section 5-29-81, on the Spindletop Dome. This well is 600 feet south of No. 1 Jarvis, the discovery well, completed a few weeks ago in the Sundance at 1,055-71 feet with an initial production of 100 bbls. No. 2 topped the sand at 1,022 feet and is estimated good for 135 to 150 bbls. initial, the pay being found about 33 feet higher than in No. 1. A location is being made for No. 3 which will complete the present series and will be followed by the drilling of another series of eight wells. There are locations on the structure for 40 to 50 wells. The Kinney-Coastal Oil Co.'s pipe line to Casper runs within 3 miles. Another structure to be tested this summer is the Bates Park Dome, upon which the Shoshone Consolidated Oil Co.'s No. 1 has been spotted in Section 4-30-81. Across the line over in Carbon County, but in the same area, the Foreman Oil Co.'s No. 1, NE cor. NW, Section 16-28-80, on the Graybeal Dome, has resumed drilling after being shut down for the winter at 4,280 feet. This well is rigged with a rotary outfit that compares with the best in the State and capable of making a deep test. If the Sundance does not yield anything worth while, it probably will be carried on down to the Embar and Tensleep.

The Producers & Refiners' No. 19, NW cor. SE, Section 25-26-87, on the East Ferris Dome in Carbon County, which two months ago created a considerable furore when it encountered light oil of 36 gravity in the Tensleep at 4,525 feet, is not coming up to earlier expectations. This was the first light oil of paraffin base to be found below the red beds in Wyoming. The well started off making 700 bbls. daily from 3 feet of sand, but water showed up and it dropped to about half of that quantity of which about 50 per cent was water. It was then deepened to 4,600 feet where it developed a flow of 5,000 bbls. of warm sulphur water. It is being plugged back in an effort to make it into a producer. The 6¼-inch casing is being cemented at 4,495 feet. Same company's No. 24, Section 26-26-87, is stripping out the 10-inch casing at a total depth of 2,625 feet. Same company's No. 8, Section 7-26-89, on the Wertz Dome, is rigging up to run cable tools at 3,249 feet. It was drilled to the present depth with a rotary. This is a deep test to the Sundance which has never been drilled on the Wertz Dome, no well being carried below the gas belt in the Dakota. It set the 15½-inch casing at 2,291 feet, believed to be one of the longest strings of that size ever run in Wyoming. The 11¾-inch outside diameter casing was set at 3,250 feet. The Ohio Oil Co. has two wells drilling in the Rock River Field, its No. 6 Harrison & Cooper, Section 3-19-78, being at 3,455 feet, and its No. 2 Harrison & Cooper, NE SW NW, Section 27-20-78, drilling at 325 feet.

Oregon Basin Field

Several wells in the Oregon Basin Field in Park County are still drilling in though none of them have yet been classed as completions. The Ohio Oil Co.'s No. 1 Baston, NE cor., Section 6-50-100, is drilling in the Tensleep at 3,800 feet and flowing by heads and making 250 bbls. daily, and its No. 3 Sonners, NE NW, Section 8-51-100, is making 500 bbls. a day from a total depth of 3,510 feet, while drilling continues with the bottom still in the Embar. Same company's No. 2 Wilson, NW cor., Section 4-50-100, is still bottomed on top of the Embar at 3,554 feet, where the 6⅝-inch casing was set. The well is being standardized and will be drilled in with cable tools. Charles E. Orchard's No. 1 Rue, SW cor., Section 28-51-100, which was reported as a completion at 3,890 feet with an initial production of 300 bbls., is showing up better since the mud has been bailed out and is expected to do better than 500 bbls. The Continental Oil Co.'s No. 1-A State, NW cor., Section 16-51-100, is drilling at 2,430 feet and carrying the 12½-inch at 2,406 feet. The Cody Petroleum Co.'s No. 2 Klindt, NE NE, Section 7-51-100, which was delayed at 3,245 feet when the 12½-inch casing collapsed, is running a string of special 9-inch. The Ferdig-Wyoming Oil Co.'s No. 1 Hough, SE cor., Section 19-51-100, is standing full of oil at 3,866 feet and occasionally making flows by heads. The Lenco Petroleum Co.'s No. 1 Rousseau, NE NW, Section 33-51-100, is fishing at 3,048 feet, and its No. 1 Lyle, SE cor., Section 24-51-101, is drilling at 3,020 feet. Same company's No. 1 Robertson, NE cor., Section 1-50-101, is drilling below 1,300 feet. The Enalpac Oil Co.'s No. 2 Pauline, SW cor. SE, Section 5-51-100, is drilling at 2,371 feet, and its No. 1 Western States, NE SW, Section 30-51-100, is drilling at 2,918 feet in the red beds. Ross & Richards' No. 1 Beck, SW cor., Section 28-52-100, is drilling at 810 feet, and the Producers & Refiners' No. 1 Frisby, SW cor. NE, Section 32-52-100, is waiting for cement to set at 2,408 feet. The Wisconsin Holding Co.'s No. 1 Rausch, NW cor., Section 9-51-100, is waiting for pipe at 2,610 feet. The J. W. Bales' No. 1 Beck, SE SW, Section 20-52-100, in the north

end of the field, which has attracted some attention as a result of shows of oil and gas at shallow depths, is reported making a flow of several million feet of gas at 1,305 feet. The first show of light oil was at 1,150 feet. The shows have been credited to the Frontier series, but it is believed that the lower Dakota and upper Morrison are most likely to be the horizons.

Several wells which have been carried in the drilling reports have completed validation requirements and are shut down indefinitely. These include Baston & Darrow's No. 1 Welch, NW cor., Section 10-50-100, at 565 feet; Yakima Oil Co.'s No. 1 Chapman, NE cor., Section 23-51-101, at 508 feet; and 3 Holding Association's No. 1 Downing, Section 35-51-100, at 506 feet. Park County operations other than Oregon Basin include the following: The Ohio Oil Co.'s No. 1 Pulley, Section 27-53-101, Shoshone anticline, cleaning out at 3,135 feet, and its No. 2 Buffalo, Section 3-47-100, running the 12½-inch at 1,115 feet at which depth it has a good show of gas.

Sweetwater County

In Sweetwater County, the Custer Petroleum Co.'s No. 1 Wilson, Section 24-12-100, Hiawatha Dome, is drilling at 1,975 feet after going through a 5-foot sand showing more gas. The water sand encountered at 1,720 feet is the last known water sand in the district, that is, no water is supposed to be found at a lower depth. It was shut off with the 13⅜-inch casing at 1,785 feet. The sands so far cut correlate accurately with those found in the same company's No. 1 Kuykendall, 1½ miles distant on the Colorado side. The Prairie Oil & Gas Co.'s No. 1 Tucker, Section 18-13-99, is reported fishing for tools at 698 feet. The Producers & Refiners and Marland Production Co.'s No. 1 on Section 26-20-104, North Baxter Basin, is reported in shale at 1,015 feet.

In the La Barge district, the California Petroleum Corp. is taking inventory preliminary to turning the operation over to the Texas Production Co. It is understood that after the details are cleared up the Texas Production Co. will start on a drilling program calling for nine wells in the proven area. The Utah Oil Refining Co.'s No. 1 Bird, SE Section 21-27-113, which has been shut down for some time at 2,003 feet, is rigging up to pull casing and abandon. The Midvale Oil Co.'s No. 1 Fallis, SE Section 8-27-113, is drilling at 600 feet after being shut down for the winter. The Wyoming Producers Oil Co.'s No. 1, Section 30-28-113, is drilling at 1,900 feet, and the Ogden-La Barge Oil Co.'s No. 1, Section 18-27-113, is fishing for tools at 2,560 feet. The Rainbow Oil Co.'s No. 8 is drilling at 150 feet. In the Snyder Basin district the California Co.'s No. 2, CEL SE, Section 11-29-115, is about ready to spud, and its No. 1 Bushnell, NE SW SE, Section 11-29-115, is still shut down at 1,197 feet.

In Uinta County, the California Co.'s No. 1 U. P., Section 7-17-116, Muddy Creek Dome, is bottomed at 510 feet and setting the 15½-inch at 412 feet.

In Niobrara County, the Buck Creek Oil Co.'s No. 1 Hattie Peterson, NW cor. Section 30-37-62, Ant Hills Dome, is drilling at 4,066 feet with the 6¼-inch at 4,018 feet. Same company's No. 1 Denning, SE NW, Section 4-36-62, Cow Gulch Dome, is bottomed at 945 feet and running the 12½-inch.

One completion was reported in Salt Creek, this being the Midwest Oil Co.'s No. 13, NE Section 34-40-79, completed in the first Wall Creek at 1,180 feet with an initial production of 46 bbls.

Montana

The Ohio Oil Co. has purchased a 120-acre tract in the Pondera Field in northern Montana, being the third major operating company to enter that field. The acreage taken over by the Ohio company lies a mile northwest of the Montana Pacific discovery well. Consideration is not known. The California Petroleum, which last week bought the 30 per cent interest of the Treasure Belt Co. in a 4,000-acre tract in the same field, has acquired the 70 per cent interest of the Claggett Development Co. in the same tract and is now sole owner. One rig has been erected on Section 8-27-4 and another location has been made. With the Calpet, the Texas Pacific and the Ohio in the field, thorough exploration of the structure is assured.

The Hardrock Oil Co.'s well on the Bannatyne Dome, delayed by two accidents, is standing with 600 feet of oil in the hole after a shot. The well has been cleaned out and is about ready to go on the pump.

The Continental Development Co.'s well near Pendroy and the Elliott well on the Pondera Dome both ran into sulphur water after showing oil. The Continental well found two oil-bearing sands, one at 2,530 feet and the other at 2,576 feet. The latter showing was in the top of the Madison, and might be developed into a commercial well. The sulphur water was encountered at 2,590 feet, and the well will be plugged back and shot in the top of the Madison. The record of the Elliott well was very similar, oil being reported at 2,037 feet and at 2,051 feet. The combined production from these two sands would probably make a 10-bbl. well. Hole was carried on down and struck sulphur water at 2,086 feet. It is being plugged back for a shot.

Kevin-Sunburst

In the Kevin-Sunburst Field, several dry holes are reported from the famous Wilcox district. The Oil Producers' No. 2 Wilcox on Section 8-34-1 found water at the Ellis-Madison contact and no oil in the lime. Reports from the Radigan Hungerford No. 2 Adams on Section 12-34-2 are the same, water at the contact and no oil in the Madison. The Barger Sunburst No. 3 on Section 9-34-1 also came in a duster. The Radford Oil Co. is drilling in a well on Section 8-34-1, which looks good for production. This company's No. 1 on this lease was a dry hole. There is some talk of shooting the Radigan Hungerford well to see if oil can be developed.

The Hannah Porter No. 1 Maloney on Section 8-34-1 swabbed 225 bbls. on a test and when put on the pump made better than 150 bbls. The Dakota Dubuque No. 2 on Section 29-35-2 was reported a dry hole, but developed a 35-bbl. production after shooting.

The Sunburst Oil & Refining Co.'s test well on the Flat Coulee structure has resumed drilling and this most important wildcat should soon be completed. The well was filled with mud to hold down the gas pressure and when this was removed it appeared that water had overcome the gas and oil in the hole. This condition was only temporary and the well is now reported making several million feet of gas and about 50 bbls. of oil. Production is coming from the Baskoo sand at 2,606 feet and from the Ellis at 2,878 feet. It is the intention to carry the hole 100 feet into the lime.

Oil-field workers in northern Montana have announced that they will no longer assist in handling nitroglycerin. The movement is reported to have started in the Bannatyne Field, where a tool dresser was killed and a driller injured in an explosion several weeks ago. Drillers and tool dressers in the Kevin-Sunburst Field have made a similar announcement. The men take the stand that they are not employed for such hazardous business and that the shooters are paid to take the risk connected with handling nitroglycerin. If the men stick to this decision, it will mean the employment of extra men by the companies who shoot wells in Montana.

Natural Gas

The Public Service Commission of Montana has taken under consideration the evidence submitted at the recent hearing on natural gas rates in Great Falls. Gas companies from all parts of Montana were asked to send representatives to present the various schedules in force in the State while the Great Falls Gas Co. contended the case should be judged on conditions prevailing in Great Falls and not elsewhere. The city has now been using gas for about 10 days.

Montana is greatly stirred by rumors of the importation of gas from Canada for Montana consumption. It was announced last week that E. B. Coolidge and associates had acquired a controlling interest in a large tract in Canada on which is located the famous Rogers well. This week W. R. Finney, chief engineer of the Midwest Refining Co.; Fred Wood, petroleum engineer; G. H. Jacques, production superintendent for the same company, and L. M. Kiplinger, cashier of the Ohio Oil Co., paid a visit to Montana and were in conference with Coolidge and Hubbert of the Montana Gas Corp.

ROCKY MOUNTAIN PRODUCTION
Runs from the Field, Week Ending May 12

Wyoming	
Salt Creek	41,330
Big Muddy	2,630
Grass Creek	2,460
Elk Basin	1,290
Greybull	20
Rock River	2,500
Lance Creek	740
LaBarge	840
Poison Spider	2,220
Hamilton	1,220
Oregon Basin	300
Osage	380
Lander	610
Ferris	100
Byron	50
Lost Soldier	5,110
Simpson Ridge	50
Total Wyoming	61,850
Montana	
Cat Creek	1,760
Lake Basin	150
Kevin-Sunburst	9,600
Total Montana	11,510
Colorado	
Florence	1,151
Moffat	1,359
Fort Collins	2,896
Iles Dome	340
Rangely	100
Tow Creek	478
Boulder	25
Total Colorado	6,349
New Mexico	
Rattlesnake	33
Hogback	510
Table Mesa	None
Artesia	1,218
Maljamar	207
Total New Mexico	1,968
Total Rocky Mountains	81,677

OIL COMPANIES ARE PROMOTING MOTOR TRIPS

(Continued from Page 32)

chinery. Nevertheless, they do show an increased consumption per car.

Mr. Duce is a warm supporter of the plan. He expressed the opinion that if The Oil and Gas Journal can put it over that it alone will justify the magazine's existence. He says that in his opinion the industry has not been doing for itself what it could easily do to promote its own interests. He pointed out that the one exception was the introduction of the kerosene burning lamps into the Orient.

There was considerable discussion of the enormous expenditures being made by the railroads in selling western scenery. It is apparent that the railroads are seeking greater passenger mileage by rail, but indirectly this stimulates travel by motor car. If the refiners working together or as single units conducted similar national campaigns stressing the use of motor cars, the benefits might accrue in part to the railroads, but this would only offset the advantage the distributors receive from the railroad advertising. However, the railroads do co-operate to some extent in promoting travel by motor cars. Many of the western lines have their own bus line service and ureg the use of motor cars after the tourist arrives to better reach points away from the railroads.

Community Advertising

The extent to which advertising for tourists is being conducted in the West is steadily on the increase. It has been estimated that $5,000,000 is being expended in community advertising by various western organizations this year alone. This comprises funds raised by individual communities in the interest of business in general and does not include expenditures by railroads and organizations that have something they are offering to sell direct to patrons. On the Pacific Coast and west of the Rockies it is stated that community expenditures for advertising has grown from $100,000 to $2,000,000 a year in the the past five years. These figures are entirely independent of what communities are doing in the way of furnishing accommodations to tourists Last year there were 350 community auto camps operated in Colorado, compared with only 2 in 1915. The registrations at these camps in 1927 was 825,000, this number including duplicates who stopped at more than one camp or more than once at a single camp. There are 17 national forests in Colorado and provisions are made by the Government for the accommodation of tourists, such as open-air ovens, shelter houses, camping sites, etc. Last year there were 1,850,000 visitors, including duplicates, in these forests. The Government's aid to tourists in the national parks is well known. Last year there were 229,862 rail and auto visitors in the Rocky Mountain National Park, while the Yellowstone, Mesa Verde and other parks in the Rocky Mountains were all well patronized. The State and Federal Governments in all the Western States are carrying on extensive road building campaigns. The efforts being put forth to create and take care of tourist travel is tremendous, yet it appears that the oil industry is not as active in that direction as others.

It was suggested by one man that the matter of actually providing attractions for local tourists is worthy of consideration. It was pointed out that a few years ago, before the motor car had made such heavy inroads on the business of the city traction lines, that the Denver Tramway Co. employed brass bands to give concerts in outlying municipal parks, or contributed to entertainments of various kinds if not actually bearing all the expense, for the purpose of creating more traffic. The fare then was 5 cents. The mileage to and from these resorts generally was from 5 to 10 miles in each direction. The company found the increased business yielded a substantial return on the investment. It was pointed out that if the traction company could obtain a profit on a 5 to 10 miles haul at 5 cents, after paying operating expenses and providing the cost of the amusements, that local distributors joining together and putting on attractions at some distant point for the week end might find the revenue from increased consumption of gasoline sufficient to justify the effort. It might take some experimenting to determine the facts.

CHAMPAGNOLLE MAY MAKE MAJOR POOL

(Continued from Page 30)

2,600-700 feet a mile or two east, also went quickly to salt water.

These wells were about 10 miles southeast of Champagnolle production, and after abandoning the Cordell well, Garrett-Modisette moved a mile south and drilled No. 1 Union Saw Mill Co. to 4,193 feet, where it was abandoned on account of hot salt water. With a surface elevation of 186 feet the log checked 17 feet lower than the Cordell well. It encountered all the known sands familiar to El Dorado and Smackover operators and topped the red beds at 2,900 feet and took a core at 3,050 feet which showed oil; another at 3,263-71 feet showed oil and gas and after coring the third time from 3,355-80 feet ran a patent testing tool and filled up 12 fourbles with salt water, the test also showing much gas. An oil-saturated core was taken at 3,684-94 feet and again at 3,798-3,830 feet. The 6⅝-inch casing was cemented at 3,798 feet and a test of 8 feet of sand made a sufficient showing to make the operators think they could have made a 10-bbl. well at that depth, but they went on deeper and got a salt water show, taking cores from 3,863-3,903 feet getting hard sand showing oil and gas. The testing tool was not run on all of these sands and showings below 3,795 feet, it was explained, as they were drilling with open hole and were afraid of getting stuck or damaging the hole.

Meanwhile other wells were drilled in that part of Union County which had similar experience, at least two of them looking for a while as though they would develop commercial production. Since the development of Champagnolle began its sands have yielded two distinct grades of oil, asphalt and paraffin base, with grav-

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2 Speed Transmission Gives More Power When It Is Needed

Two speed transmission makes it easy to handle pipe with Buffalo Drilling Unit, Model PB. Simply shifting a lever practically doubles the drawing power at the belt pulley. It is just like throwing an automobile into "low."

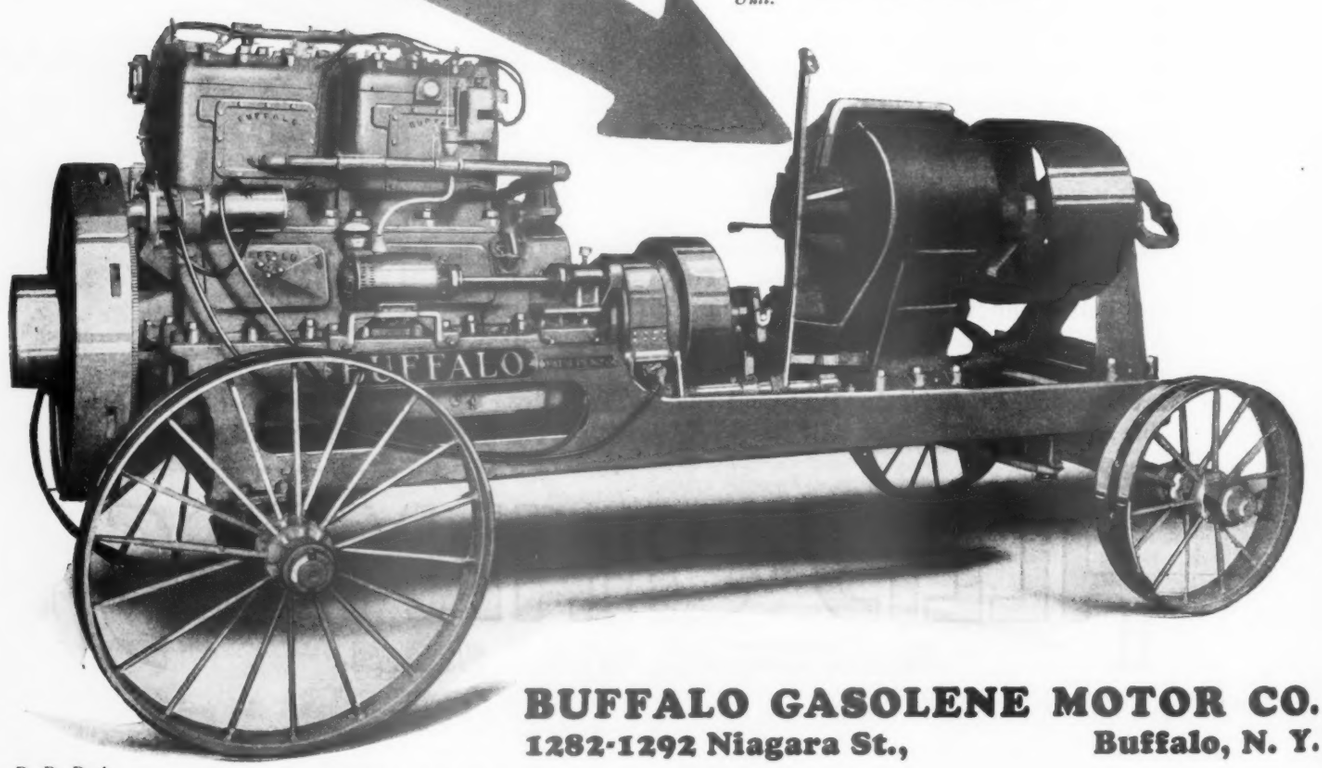
The Buffalo Drilling Unit is superior to other power in dropping tools or pulling a bailer, and does the work better. It is all in one unit—easy to move, easy to set up.

Users who have tried other outfits have standardized on the Buffalo Drilling Unit. They say it always gives them dependable power, no variation of motion, cuts down operating costs through saving in fuel, oil, repairs and lost time due to breakdowns. It requires less water—half a barrel will last a day.

Charles Cross, Virgil, Kans., says:

"I have drilled seven wells with my Buffalo Unit and have spent $34 for repairs on all seven wells. These wells were from 1,600 to 2,400 feet deep. I am buying another Buffalo."

Write today for catalogue which gives all the facts about the Buffalo Drilling Unit.



BUFFALO GASOLENE MOTOR CO.
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Bradford, Penna.
Parkersburg Rig & Reel Co.
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The Prichard Supply Co.
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El Dorado, Kans. McCamey, Texas
Midland, Texas Abilene, Texas

Louden Tool Co.,
Kittanning, Penna.

ities running from 22 to 36, from three horizons. Three wells, within a quarter of a mile of each other, afford a good illustration. C. E. Murdock's No. 1 Gregory, SE cor. NE SE Section 10-17-14 (drilled by Garrett-Modisette and bought by Keen & Woolf-Root Refineries, Inc., and later by Murdock) made 275 bbls. of 22 gravity oil and 3,000,000 feet of gas from 2,765 feet; Pure Oil Co.'s No. 1 Gregory, NE cor. SE SE of the same section made 1,600 bbls. 36 gravity crude from 3,152 feet; Magna Production Co.'s well in NW cor. NW NW Section 14-17-14, made 31 gravity oil from 2,997 feet. The discovery well in Section 1-17-14 made 31 gravity oil from around 3,050 feet. All are still producing

Thirty-nine Operations Under Way

Completion of the Pure's well as the first big producer from the red beds led immediately to a great deal of new work and plans for deepening producers or failures in the upper horizons where possible, so that at this writing there are 39 operations under way either as locations, rigs or drilling with several of those actually drilling at or near testing for the deep stuff.

As to the direction in which production will trend, there are as many opinions, almost, as there are those watching and taking part in the development. In spite of the salt water in the Lion test, there are quite a number who believe it will continue south toward the Lawson-Urbana district or southwest toward the old El Dorado east field with which they even predict it will eventually join. Others regard the Lion as an edge well indicating commercial production cannot be hoped for south of it, and think the field will prove up to the north and west, disregarding the failure of Oilwell Corp.'s No. 1 Thompson in the SE cor. NW NE Section 10-17-14, one-half mile north and a quarter mile west of the Pure well, as being a junked hole. Total depth, however, was 3,047 feet. It showed for 10,000,000 to 15,000,000 feet of gas on drill stem test of 6 feet of sand at 2,740-46 feet and casing was cemented on top of the sand, the resulting test developing 5,000,000 feet of gas with 200 bbls. of salt water. This was killed and the hole deepened to 2,829 feet where it cored salt water sand to 3,047 feet and was then plugged back to 2,600 feet at which depth it was finally abandoned as junked.

The Shoestring Theory

Those who believe production will be limited to a shoestring use this well as one of their arguments and use Simrall and others' No. 1 Finley in Section 12-17-14, 1¼ miles east of the new deep producers, as an argument that it cannot go eastward. This well got salt water at 2,710 feet and at 2,915-19; cored the top of red beds at 2,948 feet and was dry at 3,010; cored black shale at 3,020-22 feet. Salt water was found again at 3,079 feet, but at 3,169 feet it had 5 feet of sand that showed 8,000,000 feet of gas on drill stem test and casing was cemented at 3,164 feet for a test which again yielded salt water and the hole was abandoned at 3,179 feet, at which level it is claimed to have the same subsea elevation as the Lion well just tested.

Lease Prices Are High

There is much scurrying around for leases, but prices apparently are regarded too high, on the strength of Champagnolle's performance up to date by those who are after them, as abstractors and the Union County clerk have not had to hire any additional help to take care of the business. Some of this scouting for leases is being indulged in to the northwest of proven area in both the north and south ends of the field, indicating a belief that production will trend in that direction to become linked up with Smackover in the end. It would not have to be extended very far to do this. Two of the major companies are reported being particularly active in that direction, and Rhodes and others are reported to have derrick up in the NW cor NE SE, Section 21-16-14, and E. M. Jones to have location in the NW cor. SW SW of the same section. These, however, have not been verified.

For their part, business interests of El Dorado and the county and state highway authorities are profiting from their experience with the collapse of the El Dorado-Smackover road under oil field traffic and are planning immediate construction of a new road through the Champagnolle district that will stand up and also repairs to the already worn highway to the field built by the county and the oil operators when the pool first appeared on the horizon. The new road will afford direct access from Smackover and Norphlet as well as from El Dorado and laterals are to be conditioned in preparation for the great increase in traffic anticipated to follow recent developments.

GAS MEN MAY SELECT PITTSBURGH, LOUISVILLE

(Continued from Page 30)

vention carried home several new ideas as to increasing load.

Farmer Has New Method

One of the most unique methods of increasing loads was reported by Frank L. Chase of the Lone Star Gas Co., whose close observation of developments in the gas industry has brought to light numerous suggestions of merit. An ingenuous Texas farmer fostered an idea that may broaden into a far-reaching development.

After figuring the loss resulting from mildew from permitting his alfalfa to dry on the ground after cutting he conceived a plan for artificially drying his rapidly rotating crop. His farm was close to a main line gas artery and he carried his problem and possible solution to the gas company operating the line.

It was decided to build a drying plant. A large building was constructed and boilers installed to supply steam for the machinery. The boilers were fueled by gas. A conveyor was built to carry the fresh-cut alfalfa through the area in which it would be dryed. Heat from the boilers and that heat which was trapped from other sources was utilized to dry the alfalfa. The conveyor carried the alfalfa over the drying unit slowly. The cost of the plant was estimated to be between $50,000 and $75,000

It is now possible for that farmer to cut his crop one day and ship it the next day. In addition, his crops are harvested in much better condition and his product is improved. The rapidity with which he can handle the crop and the loss saved as a result of moving the crop quickly from the field amply offsets the operating cost of the plant and depreciation. The owner of the drying plant figures his investment will more than pay for itself and is planning to increase the revenue of the plant by drying hay as well as handling crops for other farmers.

H. J. Hoover urged the gas men to consider incineration by gas as a profitable measure of increasing loads. In his remarks he said that a home using gas with a water-heating unit barely permitted the gas company to break even in ordinary cases. With the water-heating unit the gas company made a little profit and additional appliances increased the earnings of the gas company.

After relating numerous examples of the installation of gas incinerators, Mr. Hoover estimated that those appliances would increase the revenue of a company on an average of $15 a year per incinerator. In one city several hundred incinerators were installed in homes and only around 2 per cent were returned.

During the discussion on converting coal-burning furnaces to gas-burning heating units, Mr. Creveling said the Cities Service Co. had made elaborate tests in Kansas City, Mo., and added that the conversion was satisfactory. A burner was developed by this company. Several others related experiences where conversion of coal-burning furnaces to gas-burning furnaces had been successful.

Standard Appliances

A. E. Higgins in discussing "How Can Utilities Benefit From a Testing Laboratory," said standard and approved appliances would save the industry thousands of dollars. He told of the movement started two years ago to standardize appliances and urged the industry to continue its efforts to see that appliances are standardized and safe.

Mr. Higgins pointed out that standardized and approved appliances would save thousands of dollars for the industry in service work alone. In addition to that, tested appliances would promote public confidence and gas appliance salesmen would be in a position to sell their appliances with more assurance.

Mr. Higgins emphasized the point of starting in by selling gas appliances to architects and builders who build houses for resale. Pipe a house properly at the time it is built and sell the builders on the latest and approved designs in piping and on tested and approved appliances, is one of the best methods of bringing more clearly to the public the advantages of gas, he claimed. All of those features give the house a higher resale value and make the home more modern.

It was brought out during the meeting that the association is making an exhaustive research into gas refrigeration from all angles and in comparison to electrical refrigeration The results of the research work will probably be available early this fall.

Mike Murphy of the Magnolia Gas Co. discussed briefly the construction of the Magnolia company's two telescopic lines running out of Louisiana to Texas. Both of these lines are continuous welded lines without expansion joints and laid under compression to hold the slack. Both lines have proven satisfactory.

In discussing river crossings, Burt R. Bay of the Empire companies told of one of the river crossings on the Empire company's Panhandle-to-Kansas City, Mo., line. At one point on the South Canadian River the stream was 5,800 feet wide and the bed sandy. The crossing manifold was made up with four 12-inch lines. It was made up in 600-foot sections on shore because it could not be thrown across completely built. Each section was moved out to the river bed and the sections joined together in midstream. Extra heavy river crossing clamps were used.

The Red River proved an extremely difficult crossing for the Lone Star company's line from Panhandle south to Petrolia, Tex., and after several misfortunes, a cable bridge was built to handle the river crossing. Elmer Schmidt of that company told of losing the river crossing a few times when the crossing was made in the usual manner. After that a wooden bridge was built but this proved unsatisfactory. Finally a cable suspension bridge was constructed and since then service on the line has been satisfactory.

F. T Parks declared that customer ownership was a distinct advantage for a gas company as well as other utilities. With a customer ownership patrons evinced a keener interest in the utility and could be counted on to aid the company in which he held stock when that company was being harassed by attacks from outside interests.

In selling customer ownership however, he advised against a full-time department for that work. Such a department has a tendency to sell stocks in large blocks to big buyers and thereby defeat the main purpose of customer ownership. He advised companies contemplating customer ownership to start with the employes by selling them stock on a time-payment plan. Employes with money in the company tend to make better employes, he said.

EXPORT PRICES HIGHER IN GULF COAST SECTION

HOUSTON, Tex., May 14.—Inquiries totaling 150 cars of U. S. Motor gasoline to be delivered at Texas City for export movement tended to strengthen Gulf Port export markets Monday. Buyers who entered the market as the week opened have offered 8⅜ cents, Texas City, which is slightly over previous bidding prices.

Sellers have been attempting to hold for 8⅝ to 8¾ cents, while Gulf export markets have been sluggish with plenty of material available, the steady increase in demand and the possibilities of a heavy volume of new business indicated by Monday's inquiries, have led to the opinion that 9-cent gasoline soon may be a reality.

Export and coastwise movements of lubricating stocks are expected to show some gains although previous cargo liftings together with an excellent domestic demand have almost cleaned up the coastal sources of supply. Very little lubricating oil was available for spot shipment the past week with refiners generally sold up from 30 to 60 days.

Lubs Higher

There has been a continued improvement in the lubricating oil markets with sellers for the first time in two years really being in a position to refuse business at competition prices. Sellers the past week were able to continue holding out for their top quotations and instructed agents to disregard previous orders granting them a half cent leeway to get business. Although there has been some slackening in inquiries due to the higher prces, sellers are not anxious over any possible immediate weakening.

Bunker oil was somewhat unsettled due to the cut in export posting of 10 cents on the Atlantic Seaboard although Monday the reduction had not been followed generally on the Gulf, a weaker tone was evident. Spot Bunker C oil for fueling still was quoted at $1.15. The fuel oil situation is none too encouraging as apparently there is considerable distress material. The bulk of this, however, is fuel not meeting Bunker C specifications. Several sources Monday were attempting to unload off-grade products.

FALL CONVENTION OF A.O.M.A. AT DETROIT

CHICAGO, May 12.—The fall convention of the American Oil Men's Association will be held at the Hotel Statler, Detroit, on October 16, 17 and 18, according to an announcement by James A. Gilmore, following a meeting of the board of directors of the association. The program will be arranged for the consideration of the merchandising problems of the dealers in all parts of the country.

A special invitation will be extended to the officers and directors of associations of oil men which are specially interested in the marketing of petroleum products and an effort will be made to secure the attendance of such officers and directors from all parts of the country.

Exhibit space will be provided for such as may wish to avail themselves of the opportunity to display their product to the oil men at the gathering but no special effort will be made to dispose of the space. The directors of the American Oil Men's Association wish the exhibitors to realize that the taking of exhibit space is entirely optional with them.

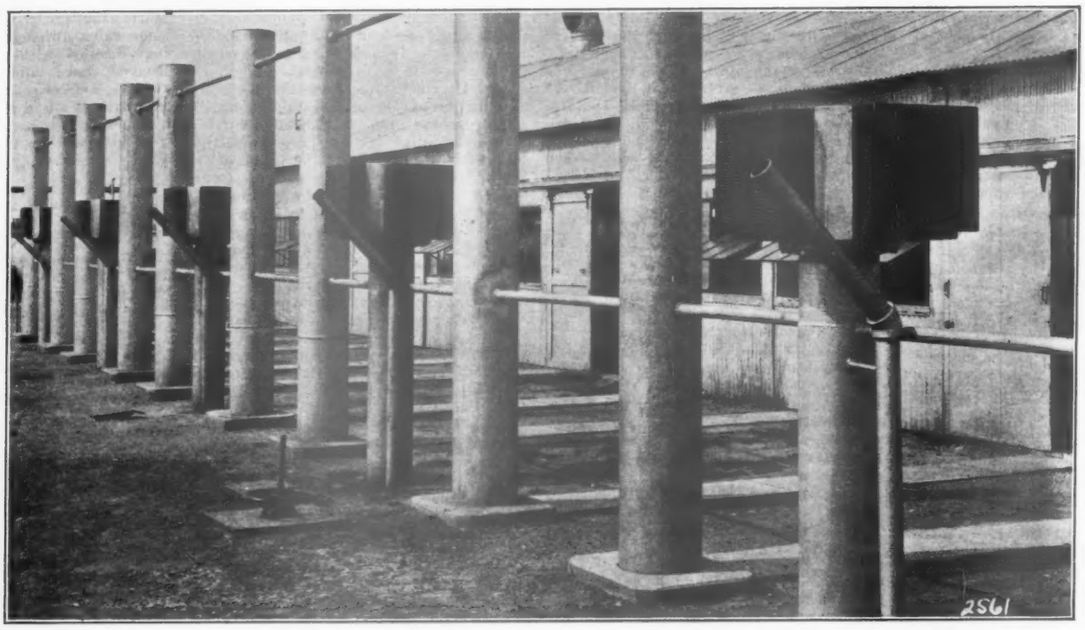
SHREVEPORT REFINERS RAISE GASOLINE PRICES

SHREVEPORT, La., May 14.—U. S. Motor fuel advanced to 7½-7¾ cents Monday with refiners moving their production as fast as they can turn it out. With a better tone permeating the entire refined market, fuel oil that threatened to become a drug two weeks ago has picked up a little and is moving satisfactorily, though the price has settled to 80-85 cents. Kerosene at 5¾ cents is as scarce as ever with only one Shreveport refiner making more than enough to meet his own orders. Dark gas oil is in demand at 2⅝-2⅞ cents and straw at 2¾ to 3 cents.

DEATH OF LEWIS O. SMITH

Lewis O. Smith, of the Virginian Gasoline & Oil Co., died Tuesday, May 8, at Charleston, W. Va., following a surgical operation. He was 47 years of age. Mr. Smith was a graduate of the University of West Virginia, where he was prominent in athletics.

REED AIR IS CLEAN AIR



Why do practically ALL Compressor and Engine Manufacturers, and MOST Operators Recommend

REED FILTERED AIR?

Reed Air Filters are easily the most preferred means of minimizing "dust carbon," and for keeping engines and compressors at peak performance, in the Oil Industry. They have won the approval of manufacturers and operators alike because:

1. They have a guaranteed cleaning efficiency of from 97% to 99%.

2. Low resistance to air flow, resulting from thin wire-strand baffling, which permits air to flow in an almost straight line.

3. Large dust accumulating capacity is afforded because dust is evenly distributed, and each strand of wire functions continually; additional oil being supplied by capillary attraction as fast as original charge is absorbed by dust.

4. Reed Filters require less frequent cleaning because of large capacity per unit, reducing maintenance to a minimum. Filter cells are easily and quickly removed by loosening four wedge fasteners, and weigh only 20 pounds each.

As an example of the widespread use of Reed Filters by leading Oil Companies, we refer to the illustration above which shows 5 three unit Type SCF Reed Filters with weather louves which are furnishing CLEAN air to compressors. Write for illustrated catalog which describes in detail how Reed Air Filters can lower your compressor and engine operating costs.

Reed Air

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Trade ALL METAL Mark

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California Office:
2039 East 38th St., Los Angeles, Calif.

WILDCAT OPERATIONS IN OKLAHOMA

(Continued from Page 42)

T. B. Slick's No. 1 Bryan, SW cor. SE Sec. 28-17-1 ..... Plugging back to sand 5,636 ft.; having casing trouble.

Willis and others' No. 1 Sweexy, SW cor. NW SE Sec. 20-17-3 ..... Shut down 4,677 ft.

W. R. Ramsey's No. 1 McMillan, NW SW Sec. 24-15-2w.. Hole full of water at 4,507-17 ft.; shut down for orders.

Bu-Vi-Bar's No. 1 Kirkpatrick, NE SW SW Sec. 12-15-1w. Underreaming casing 5,295 ft.

BLAINE COUNTY

Lowen and others' No. 1 Unknown, NW cor. SW NW Sec. 27-16-11w ..... Spudded and shut down.

MUSKOGEE COUNTY

Finefield and others' No. 1 Jobe, NE cor. NW SE Sec. 12-15-13 ..... Dry and abandoned 1,882 ft.

Elk Drilling Co.'s No. 1 Jones, SW cor SW Sec. 34-13-17 ..... Spudded and shut down.

L. T. Haney's No. 1 Mitchell, SE cor NW SE Sec 33-13-18 ..... Shut down 1,766 ft.

J. L. Slusher's No. 1 Johnson, NE cor. SW NW Sec. 20-15-20 ..... Machine.

C. D. Bradley's No. 1 Butler, NW cor. SE Sec. 14-15-19.. Drilling 815 ft.

MURRAY COUNTY

Revels & Magee's No. 1 Labor, NW cor. NW Sec. 17-1-2.. Drilling 605 ft.

Gilcrease Oil Co. & Mohawk Drilling Co.'s No. 1 Wolfe, SE cor. NE Sec. 20-1-2 ..... Drilling 1,947 ft.

Thompson Oil Co.'s No. 1 Freeman, SE cor. Sec. 27-1s-2.. Rig.

Alter and others' No. 1 Johnson, SW cor. NW Sec. 14-4-7.. Spudded.

HUGHES COUNTY

W. J. Monahaim's No. 1 Pusby, C NW NE Sec. 114-4-9.... Location.

Noble Oil & Gas Co.'s No. 1 Wickett, SE cor SE Sec. 20-5-9 ..... Drilling 2,250 ft.

E. W. Whitney and others' No. 1 Moore, SE cor. SW Sec. 17-5-9 ..... Shut down 570 ft.

OKLAHOMA COUNTY

Cromwell Oil & Gas Co.'s No. 1 Proctor, C SE Sec. 21 14-3w ..... Dry and abandoned 4,535 ft.

Slick & Bailey's No. 1 Koester, C SE NE Sec. 18-13-3w.. Drilling 4,024 ft.

Cromwell & Franklin's No. 1 Thompson, SW cor. NE NE Sec. 15-12-3w ..... Fishing 4-inch liner, 6,840 ft.

Cromwell & Franklin's No. 1 Gross, SW cor. NE SW Sec. 22-10-2w ..... Shut down 4,702 ft.

CREEK COUNTY

J. J. Schock's No. 1 Harjo, NW cor. NE NE Sec. 26-14-10 ..... Rigging up.

Lima Oil & Gas Co.'s No. 1 Grayson, NW cor. NE NE, Sec. 11-14-7 ..... Dry and abandoned, total depth 4,020 ft.

CANADIAN COUNTY

T. B. Slick and others' No. 1 Pazowrech, NW SE Sec. 29-13-5w ..... Dry and abandoned 4,580 ft.

Ramsey Brothers' No. 1 Newman, CSL NE Sec. 9-11-7w .. Drilling 4,743 ft.

LINCOLN COUNTY

Bu-Vi-Bar Petroleum Co.'s No. 1 School Land, C NE SE Sec. 16-13-4 ..... Shut down 4,500 ft.

OKFUSKEE COUNTY

Moose & Daniels' No. 1 Stidham, SW cor. NW Sec. 4-11-10 ..... Shut down 622 ft.

SEQUOYAH COUNTY

Citizens Gas Co.'s No. 1 Johnson, NE SW NE Sec. 33-12-7 ..... Sand 1,215-25 ft.; 1,500,000 ft. gas shut in.

Hunt and others' No. 1 Unknown, SE cor. NW SW Sec. 12-12-23 ..... Spudded and shut down.

Western Natural Gas Co.'s No. 1 Green, SW cor. SE Sec. 17-11-17 ..... Drilling 600 ft.

PAWNEE COUNTY

Washoma Oil Co. and others' No. 1 Buffalo, SE cor. NE Sec. 33-22-5 ..... Location.

POTTAWATOMIE COUNTY

Shaffer-Kilgore-Sykes' No. 1 Ives, C SE SE Sec. 12-10-3 ..... Drilling 5,435 ft.

Superior Oil Co.'s No. 1 Herminghausen, SW cor. NW NE Sec. 24-8-2 ..... Fighting cave 4,390 ft.

Davy & Detrick's No. 1 McGehee, SW SE NW Sec. 10-6-2 ..... Fishing 4,998 ft.

Amerada Pet. Corp.'s No. 1 Gravel, SW SE NE Sec. 1-8-4 ..... Plugged back Simpson sand and shot, swabbing 40 bbls.

Indian Terr. Ill. Oil Co.'s No. 1 White, NE cor. NE SW Sec. 21-7-5 ..... Rigging standard tools 3,978 ft.

Roxana Pet. Corp.'s No. 1 Johnson, NE cor. SE NE Sec. 20-6-5 ..... Rig.

T. B. Slick & Roxana Pet. Corp.'s No. 1 Hurst, SE cor. NW NW Sec. 17-7-2 ..... Drilling 2,413 ft.

T. B. Slick's No. 1 School Land, SE cor. SE Sec. 16-6-5.. Rigging standard tools 3,794 ft.

CADDO COUNTY

Magnolia Petroleum Co.'s No. 1 Shelby, SW cor. SW Sec. 28-10-12w ..... Drilling 2,790 ft.

J. V. Bailey's No. 1 Hubbard, C NE NW Sec. 1-10-6w.... Shut down 150 ft.

W. J. Hartley's No. 1 Galbreath, SE cor. NW SE Sec. 29-5-12w ..... Shut down 3,394 ft.

English Drilling Co.'s No. 2 Pruitt, CNL NW SE Sec. 22-6-10w ..... Rigging up rotary.

OSAGE COUNTY

Devonian Oil Co.'s No. 1, NW cor. SE Sec. 18-22-8..... Dry and abandoned 3,115 ft.

Millard and others' No. 1, NE cor. NW SW Sec. 26-23-9.. Drilling 530 ft.

SEMINOLE COUNTY

Prairie Oil & Gas Co.'s No. 1 Davis, NE SE Sec. 21-10-7.. Rig.

Prairie Oil & Gas Co.'s No. 1 Varnum, NW cor. SW SW Sec. 5-9-6 ..... Swabbing 126 bbls. from Hunton lime; total depth 4,239 ft.

The Texas Company's No. 1 Reed, SW cor. SW Sec. 12-8-5 ..... Wilcox sand 4,720 ft.; hole full of water; dry and abandoned; running tubing to pump.

Simon & Bean's No. 1 Palmer, SE cor. NW NE Sec. 7-7-6 ..... Rigged up and shut down.

Barnsdall Oil Co.'s No. 1 Guinn, SW cor. SW Sec. 16-7-5.. Drilling 3,384 ft.

Reiter-Foster Oil Co.'s No. 1 Coat, SW cor. NW SW Sec. 14-7-6 ..... Spudding.

Magnolia Petroleum Co.'s No. 1 Vierson, SE SE NW Sec. 5-6-7 ..... Drilling 4,386 ft.

Fuhrman Petroleum Co. and Superior Oil Co.'s No. 1 Davis, SW SW SE Sec. 3-10-6 ..... Location.

C. W. Whitney's No. 1 Harjo, NE cor. NW NE Sec. 25-7-6 ..... Rigging standard tools 3,850 ft.

Blackwell Oil & Gas Co.'s No. 1 Mitchell, SE cor. NE SW Sec. 6-10-7 ..... Drilling 3,620 ft.

E. W. Whitney's No. 1 Harjo, NE cor. NW NE Sec. 25-7-6 ..... Drilling 2,620 ft.

Shaffer Oil & Ref. Co.'s No. 1 Catchochee, SW cor. SW NE Sec. 18-10-7 ..... Drilling 2,100 ft.

Sands Pet. Co. and others' No. 1 Harrison, SW cor. SW SE Sec. 4-7-7 ..... Drilling 1,900 ft.

Tidal Oil Co.'s No. 1 Foster, SW cor. SE SE Sec. 7-7-7.. Drilling 2,630 ft.

DEWEY COUNTY

Huckaby & McCoy's No. 1 Perfect, NE cor. NE Sec. 9-18-15w ..... Shut down 3,370 ft.

BECKHAM COUNTY

C. & H. Petroleum Co.'s No. 1 Barnes, SW cor. NW NE Sec. 32-9-22w ..... Drilling 3,120 ft.

ATOKA COUNTY

G. S. Cochran's No. 1 Hampton, NW cor. NW Sec. 31-1-14 ..... Rig.

Pferffel and others' No. 1-A Carter, NE cor. NE Sec. 25-9-22w ..... Shut down 300 ft.

GRADY COUNTY

Clark & Cowden's No. 1 Freed, NE cor. SW SW Sec. 28-5-7w ..... Fighting cave 1,923 ft.

Remington and others' No. 1 Fryrear, SW SW NE Sec. 13-9-5w ..... Shut down 720 ft.; may start soon.

Bedner and others' No. 1 Willis, C SW NW Sec. 13-7-5w ..... Shut down 2,450 ft.

Nichlos & Page's No. 1 Drake, SE NE SE Sec. 7-8-7w.. Shut down 2,307 ft.

Wirt Franklin Petroleum Co.'s No. 1 Garden, SE cor. SW NE Sec. 1-4-7w ..... Sand 2,003-12 ft.; 1,000,000 ft. gas.

Commercial Development Co.'s No. 1 Chrisman, C NE NE Sec. 21-4-7w ..... Drilling 1,825 ft.

Magnolia Petroleum Co.'s No. 1 Pursley, SE SW NW Sec. 8-4-6w ..... Dry and abandoned 3,905 ft.

Simpson & Fell's No. 1 Long, SW cor. SE SE Sec. 36-5-7w ..... Rigging standard tools 2,003 ft.

Galt Brown Oil Co.'s No. 1 Burrey, C NW NE Sec. 14-4-9.. Drilling 1,200 ft.

MCINTOSH COUNTY

Marione Oil Co.'s No. 1 Sanders, NW cor. NE SW Sec. 10-9-18 ..... Shut down 2,310 ft.

CLEVELAND COUNTY

Daniels & LeWright's No. 1 Vandever, C SW Sec. 15-7-1w ..... Sand at 2,784-2,768 ft., dry; shut down 2,975 ft.

KIOWA COUNTY

Blue Mountain Oil Co.'s No. 1 Jones, SE cor. NW NW Sec. 17-5-14w ..... Shut down 530 ft.

Johnson & McDowell's No. 1 Thompson, SW cor. NE Section 6-6-15w ..... Drilling 855 ft.

Dave Malernec's No. 1 Van Kirk, NW cor. NW Sec. 35-7-15w ..... Drilling 665 ft.

A. C. Varner and others' No. 1 Bonham, CSL NW NW Sec. 5-6-18w ..... Shut down 1,127 ft.

PONTOTOC COUNTY

Douglas Oil Co.'s No. 1 Sutton, C NW NW Sec. 10-3-8.... Drilling 320 ft.

Gillespie & Gant's No. 1 Taylor, SW SW SE Sec. 13-5-4.. Sand 2,818-52 ft., water; plugged back 2,570 ft., shot 80 and 20 quarts; swabbed 29 bbls.; shut down.

T. B. Slick's No. 1 Barnett, NE SE NW, Sec. 13-5-6..... Dry and abandoned 3,998 ft.

Mid-Continent Petroleum Corp.'s No. 1 Harjo, SE NE NE Sec. 14-5-7 ..... Sand 2,618-22 ft.; 10,000,000 ft. of gas.

T. B. Whitney and others' No. 1 Moore, SW cor. SE Sec. 17-5-9 ..... Shut down 2,654 ft.

Winkler and others' No. 1 Timer, C SW SE Sec. 31-5-9... Shut down 2,761 ft.

R. F. Garland's No. 1 Strickland, SW NW SW Sec. 10-4-3 ..... Fishing 2,690 ft.

C. J. Shervin and others' No. 1 Wright, NW NE NE Sec. 13-4-6 ..... Drilling 2,200 ft.

Boles and others' No. 1 Rayburn, SW SE Sec. 35-4-6..... Shut down 1,340 ft.

Texas-Pacific Coal & Oil Co.'s No. 1 Stewart, C SW NE Sec. 11-5-8 ..... Drilling 2,700 ft.

Henry and others' No. 1 Gregg, SW SE NW Sec. 14-4-7.. Shut down 1,090 ft.

GARVIN COUNTY

Dixie Oil Co.'s No. 1 Perkins, SE NW Sec. 15-4-1..... Drilling 5,415 ft.

Magnolia Petroleum Co.'s No. 1 Vaughn, NW SW NW Sec. 12-3-1 ..... Drilling 5,550 ft.

Heath & Bauman's No. 1 Hattell, SW SE SW Sec. 10-3-3 ..... Shut down 1,640 ft.

COMANCHE COUNTY

Jolly-Ogg Oil Co.'s No. 1 Neeley, SE NE Sec. 24-3-10w.. Drilling 2,907 ft.

Ashcraft and others' No. 1 School Land, SE cor. SE Sec. 20-2-10w ..... Broken sandy lime 822-954 ft.; swabbed 3 bbls.; total depth 975 ft.; shut down; material moved out.

Jenkins and others' No. 1 Smith, SW cor. SE SE Sec. 34-1-10w ..... Shut down 1,530 ft.

Green and others' No. 1 Wilson, C NE SW Sec. 14-1-12w.. Flow 24,000 bbls. fresh water, trying to shut off.

COAL COUNTY

McGraw and others' No. 1 Patton, SW SE NE Sec. 35-1-8 ..... Drilling 1,620 ft.

Indian Territory Illuminating Oil Co.'s No. 1 Harris, SW cor. NW Sec. 10-1-11 ..... Will shoot to try and clean hole; total depth 1,725 ft.

Robert Galbreath and others' No. 1 Jones, SW cor. SE Sec. 24-1-9 ..... Spudded.

OKLAHOMA PANHANDLE

CIMARRON COUNTY

Phillips and others' No. 1 Unknown, NW cor. NW Sec. 24-6-2 ..... Shut down 4,340 ft.

Sinclair Oil & Gas Co.'s No. 1 School Land, NW cor. NW Sec. 22-5-2 ..... 4,872 ft., will plug.

Ramsey Brothers' No. 1 School Land, NE SW SW Sec. 21-5-5 ..... Drilling 3,755 ft.

Ramsey Brothers' No. 1 Unknown, NW NE Sec. 27-5-5.. Shut down 4,100 ft.

Ramsey Brothers' No. 1 School Land, SE SE Sec. 34-4-1.. Drilling 3,850 ft.

Gladys-Belle Oil Co.'s No. 1 Iserial, SW NE Sec. 25-3-7.. Plugging 4,392 ft.

Valerius & Wilkinson's No. 1 Unknown, SE cor. NE Sec. 25-3-7 ..... Drilling 2,545 ft.

H. F. Wilcox Oil & Gas Co.'s No. 1 Zea, NE SW Sec. 28-3-13 ..... Shut down 3,765 ft.

Skaer and others' No. 1 Mathis, SW NE NE Sec. 17-3-23. Drilling 3,227 ft.

Ross Fenton and others' No. 1 Graves, NE NE Sec. 2-2-9.. Spudded and shut down.

TEXAS COUNTY

Danner Oil Co.'s No. 1 Graves, NE cor. SW SW Sec. 23-2-18 ..... Shut down 700 ft.

Newsom and others' No. 1 Allison, SE SE Sec. 4-1-12 .... Shut down 4,040 ft.

Dotton and others' No. 1 Baker, C NW Sec. 4-1-13..... Rig blown down.

W. & H. Oil Co.'s No. 1 Hitch, NE cor. NE Sec. 26-1-15.. Shut down 600 ft.

Three Way Oil Co.'s No. 1 Cane, SW NW Sec. 11-1-18.... Hole full of water at 3,318-58 ft.; shut down.

Conley and others' No. 1 Unknown, SE cor. NW Sec. 5-1-19 ..... Snudded and shut down.

Texas County Gas Co.'s No. 1 Bacon, C NE NE Sec. 17-3-15 ..... 10,000,000 ft. gas 2,606-42 ft.

SOUTHERN OKLAHOMA

BRYAN COUNTY

Green Oil & Ref. Co.'s No. 1 Kemp, SE cor. NW NW Sec. 28-8s-9 ..... Shut down 600 ft.

Alexander & Oppenheimer's No. 1 Hampton, SE cor. NE Sec. 26-7s-11 ..... Shut down 1,425 ft.

COTTON COUNTY

Everts and others' No. 1 Nellie, SW cor. NW NE, Sec. 11-5-13w ..... Rig.

JEFFERSON COUNTY

J. R. McCoy and others' No. 1 Smith, SE cor. NW Sec. 14-7s-6w ..... Rigged up and shut down.

W. Bassett's No. 1 Johnson, NE NW Sec. 15-6-8w ..... Location.

Amerada Petroleum Co.'s No. 1 Emerson, NW cor. SE SW Sec. 28-5s-8w ..... Drilling 1,232 ft.

CHOCTAW COUNTY

Hugo Gray's No. 1 Smith, SE cor. SW NW Sec. 27-5s-16.. Shut down 1,540 ft.

Choctaw Petroleum Co.'s No. 1 Wilson, SW cor. SW Sec. 15-6-19 ..... Shut down 1,346 ft.

TILLMAN COUNTY

Bray and others' No. 1 Barker, NE cor. SW NW Sec. 9-1-15w ..... Drilling 650 ft.

A. J. Bundy's No. 1 Hayster, NE cor. SW SE Sec. 23-2-17w ..... Snudded.

A. N. Pearson's No. 1 Mounts, SW cor. SW Sec. 3-5s-15w.. Rig.

Landfair and others' No. 1 Smith, SE SW SE Sec. 6-2s-16w ..... Drilling 2,540 ft.

MARSHALL COUNTY

Laurel Oil & Gas Co.'s No. 1 Chastine, SE NW Sec. 26-4s-5 ..... Dry and abandoned 4,190 ft.

Magnolia Petroleum Co.'s No. 2 Marshall, SW cor. NW SW Sec. 26-5s-7 ..... Dry and abandoned 730 ft.

Alter and others' No. 1 Brown, NE cor. NW NW Sec. 11-4-6 ..... Dry and abandoned 201 ft.

STEPHENS COUNTY

Pierce & Brown's No. 1 Garland, SE NW NE Sec. 34-2s-6w ..... Shut down 1,700 ft.

Geo. Pace and others' No. 1 Absher, NW cor. NW Sec. 7-3s-7w ..... Drilling 2,005 ft.

Wade-Martin & Smythe's No. 1 Vestal, NE cor. SE Sec. 20-2-5w ..... Location.

JOHNSTON COUNTY

McPherson and others' No. 1 Wyand, CSL NE NW Sec. 8-7s-9 ..... Shut down 4,440 ft.

Wapanucka Oil Co.'s No. 1 Banks, Sec. 28-2s-9 ..... Shut down 1,530 ft.

Wirt Franklin Pet. Co.'s No. 1 Wilkes, SW cor. SE Sec. 18-4-4 ..... Spudded.

Wirt Franklin Pet. Co.'s No. 1 Foster, CNL NW SW Sec. 35-4-4 ..... Spudded.

CARTER COUNTY

Grooms and others' No. 1 Morris, CSL NW NE Sec. 19-1s-2w ..... Shut down 3,463 ft.

LATTIMER COUNTY

Limestone Oil & Gas Co.'s No. 1 McMurray SW cor. SW Sec. 15-5-13 ..... Shut down 1,700 ft.

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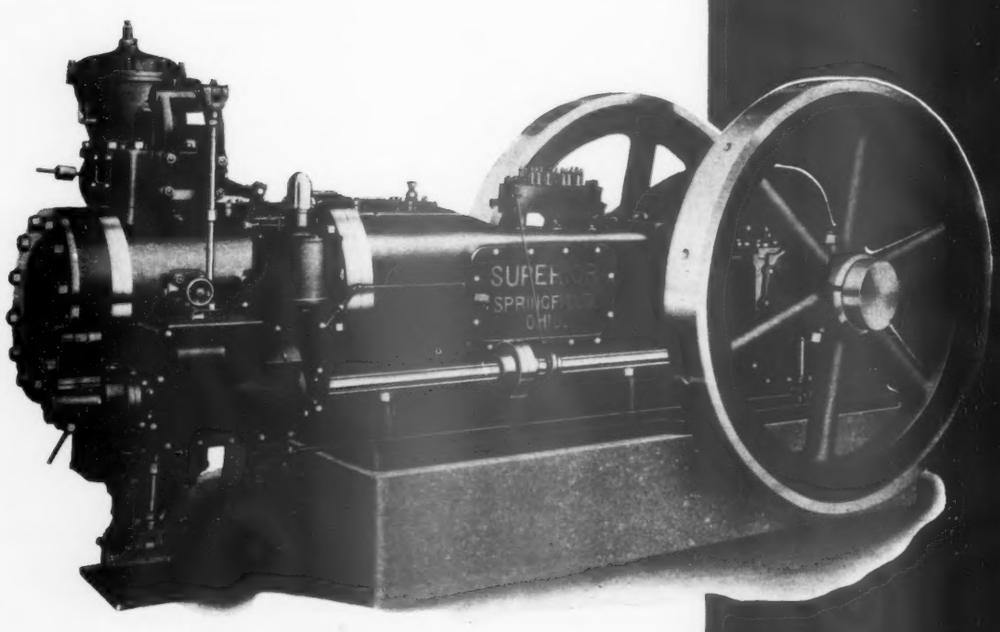
4 CYCLE - 90 H.P.



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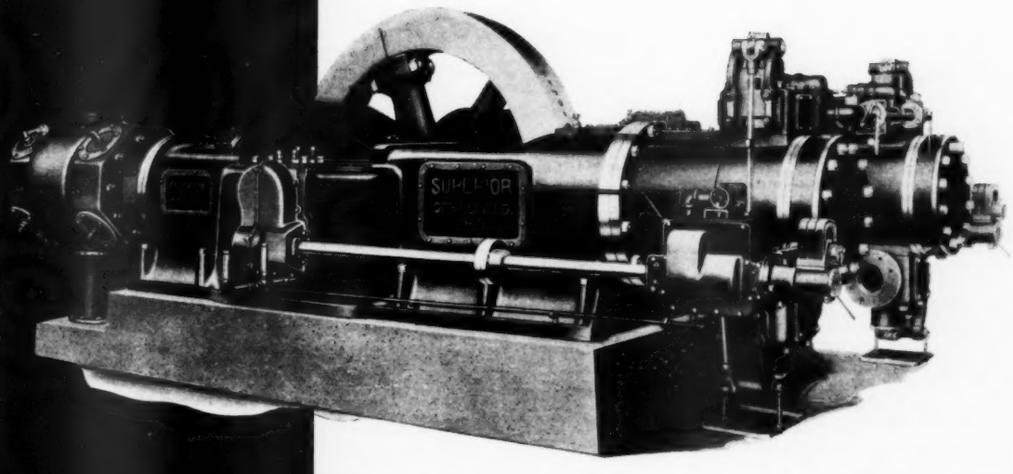

TIE
HAL SUPPLY
OMPANIES

WILDCAT OPERATIONS IN WEST TEXAS

(Continued from Page 40)

CROCKETT COUNTY

Amerada Pet. Co. and McMann O. & G. Co.'s No. 1 L. P. Powell, 2,310 ft. from S line and 1,650 ft. from W line Sec. 52, Blk. BB, G.C.&S.F. ..... Location.
Anderson & Williams' No. 1 University, SE cor. NW NW SE Sec. 19, Blk. 47 ..... Shut down 2,008 ft.
V. T. Bolin & Co.'s No. 1 P. C. Coates, NW cor. SW Sec. 4, Blk. 2, I.&G.N. Sur. ..... Shut down 2,110 ft.
California Co.'s No. 1 Powell, Lease 1, SE cor. Sec. 62, Blk. BB, G.C.&S.F. Sur. ..... Rigging up.
California Co.'s No. 2 L. P. Powell, Lease 1, 1,470 ft. W and 150 ft. N of SE cor. Sec. 72, Blk. BB, G.C.&S.F. Sur. ..... Location.
Dixie Oil Co.'s No. 1 George Thompson, Sec. 72, Blk. 1 ..... Shut down 1,130 ft.
Grayburg Oil Co.'s (formerly Osage Oil Co.'s) No. 1 Thompson-Collins, Sec. 70, Blk. 1, I.&G.N. Sur. ..... Drlg. 1,063 ft.
Grayburg Oil Co.'s No. 2 Thompson-Collins, Sec. 70, Blk. 1, I.&G.N. Sur. ..... Shut down 510 ft.
Grayburg Oil Co.'s No. 8 H. M. Halff, 660 ft. S of N L Sec. 70, Blk. 1, I.&G.N. Sur. (1,980 ft. E of their No. 2) ..... Drlg. 875 ft.
Gulf Prod. Co.'s No. 3-D Powell, 150 ft. N and W of SE cor. of their 160-acre lease out of Sec. 62, Blk. BB, G.C.&S.F. ..... Location.
Gulf Prod. Co.'s No. 1 G. L. Thompson, 200 ft. S, 4,661 ft. E NW cor. Sec. 74, Blk. 1, I.&G.N. Sur. ..... Drlg. 235 ft.
Henshaw and McMan Oil & Gas Co.'s No. 1 W. Owens, C NW Sec. 17, Blk. G.G., G.C.&S.F.R.R. Sur. ..... Top salt 1,140 ft.; top lime 2,000 ft.; drlg. 4,070 ft.
Humble O. & R. Co.'s No. 4 L. P. Powell-B, 330 ft. each way from NW cor. NE Sec. 52, Blk. BB, G.C.&S.F. ..... Rigging up.
McMann and Amerada's No. 1 Powell, Sec. 52, Blk. BB, 2,310 ft. from SE line and 1,650 ft. from W line, E.L.&R.R. ..... Location.
Pecos Oil Co.'s No. 1 University, Sec. 13, Blk. 31, 2,640 ft. from S and W lines Univ. Land ..... Location.
Renee Oil Co.'s No. 1 University, C N 40 acres of E 80 acres of SE Sec. 8, Blk. 47, Univ. Land ..... Building rig.
Republic Prod. Co.'s No. 1 L. B. Powell-B, Sec. 52, Blk. BB, G.C.&S.F. Sur. ..... Drlg. 250 ft.
Taylor-Link's No. 1 L. P. Peck, 330 ft. SE of NW line and 330 ft. SW of NE line Sec. 37, Blk. 31, H.&T.C. ..... Location.
Taylor-Link Oil Co.'s No. 2 Powell, 150 ft. S and W of NE cor. 14-acre lease, Sec. 52, Blk. BB, G.C.&S.F. Sur. ..... Location.
Tidal Oil Co.'s No. 1 University, SE cor. SW Sec. 8, Blk. 50 ..... Drlg. 100 ft.
Transcontinental Oil Co.'s No. 1 J. D. Atwood Est., NW cor. Sec. 7, Blk. PP, T.C.R.R. Sur. ..... Rig.
Van McPhail's No. 1 George Thompson, C 10-acre tract No. 31, Sec. 70, Blk. 1 ..... Location.
Van McPhail et al's No. 1 George Thompson, C 10-acre tract No. 22, Sec. 70, Blk. 1 ..... Location.
W. W. Donnelly & Young's No. 1 Massey, Sec. 29, Blk. W-V ..... Shut down 600 ft.
W. R. Simmons' No. 1 University, 150 feet N of C S line SE Sec. 1, Blk. 14 ..... Shut down 1,130 ft.
Whonlick's No. 1 R. M. Halff, 150 ft. N of S line and 200 ft. E of Pecos River, Sec. 69, Blk. 1, I.&G.N. Sur. ..... Shut down 800 ft.
World Oil Co.'s No. 1 Schneeman-B, Sec. 50, Blk. BB, G.C.&S.F. Sur., elev. 2,663 ft., contract depth 2,750 ft. ..... Top salt 1,070 ft.; hole full salt water 2,210-15 ft.; shut down 2,990 ft.
Zoch's No. 1 University, SW cor. Sec. 16, Blk. 14 ..... Top salt 515 ft.; drlg. 805 ft.
Young & Donnelly's No. 1 J. M. Shannon, C Sec. 11, Blk. 9, D.&S.E. Sur. ..... 7,000,000 ft. gas at 1,662 ft.; shut down 1,775 ft.
Young & Donnelly's No. 2 J. M. Shannon, Sec. 18, Blk. 10, G.C.&S.F.R.R. Sur. ..... Spudded and shut down.
Young & Donnelly's No. 1 J. S. Todd, Sec. 26, Blk. WX, G.C.&S.F. Sur. ..... Shut down 820 ft.

CULBERSON COUNTY

Hickey & Stiver's No. 1 C. O. Finley ..... Total depth 1,085 ft.; set 6-in. at 1,055 ft.; shut down.
Scott & Dittman's No. 1 Miller, SW cor. NW NE Sec. 1, School Blk. 97 ..... Rainbow 1,056 ft.; 300 ft. sulphur water 1,725 ft.; shut down for casing 1,767 ft.

ECTOR COUNTY

Pennsylvania Drlg. Co.'s No. 1 W. E. Connell, C NE Sec. 7, Blk. B-16 ..... Location.
The Texas Company's No. 6 Cosden-Connell, NW cor. NW Sec. 10, Blk. B-16, PSL ..... Top salt 950 ft.; drlg. 2,450 ft.

EL PASO COUNTY

Sillix et al's No. 1 W. D. Malone, Sec. 46, James M. Day Sur. ..... Shut down 265 ft., quicksand; noisy skid rig.

FISHER COUNTY

Cranfill & Reynolds' No. 1 T. F. Willingham, 510 ft. N and 660 ft. E of SW cor. NW Sec. 199, B.B.B.&C. Sur. ..... Rigging up standard tools.
Cranfill & Reynolds' No. 2 J. A. Young, 660 ft. N and E of SW cor. of NE Sec. 208, B.B.B.&C. Sur. ..... Location.
R. W. Raney's No. 2 Maberry, Sec. 56, Blk. 1, T.&P. Sur. ..... Underreaming 5-in. casing at 3,245 ft.
Sinclair Oil & Gas Co.'s No. 1 F. Steele, NW NE NE Sec. 72, Blk. 1, H.&T.C.R.R. Sur. ..... Top lime 1,635 ft.; underreaming 8¼-in. casing 2,650 ft.; total depth 2,735 ft.

GARZA COUNTY

Latimer & Waggoner's No. 1 W. L. Cross, SW cor. Sec. 13, Blk. 4, K. Aycock Sur. ..... Location.
Marland Oil Co.'s No. 1 B. F. Pippin, C NW Sec. 1,210, W. C. Young Sur. (3,750-ft. test) ..... Top salt 960 ft.; drlg. 2,540 ft.

GLASSCOCK COUNTY

Roxana Pet. Corp.'s No. 1 Boston, Sec. 30, Blk. 34, Twp. 4-S, T.&P. Sur. ..... Rigging.
Josey & Finchbaugh's No. 1 S. R. Cox, 1,320 ft. W of NE cor. and located on the N line of Sec. 29, Blk. 33, Twp. 4s, T.R.R.R. Sur. ..... Location.
Meriwether Oil Co.'s No. 1 L. S. McDowell, CNL Sec. 34, Blk. 34, T-2-S, T.P.R.R. Sur. ..... Top salt 995 ft.; drlg. 2,135 ft., blue shale.
R. R. Penn's No. 1 Hughes & Johnson ..... Location.
World Oil Co.'s No. 1 L. S. McDowell, SW SE SW Sec. 32, Blk. 34, T-2-S, elev. 2,523 ft., contract depth 3,200 ft. ..... Rigging up.

HOWARD COUNTY

J. S. Cosden & Co., Inc.'s No. 1 Dora Roberts, Lease A, 2,310 ft. E and 320 ft. N of SW cor. Sec. 129, Blk. 29, W.&N.W. Sur. ..... Spudding with machine.
F.H.E. Oil Co.'s No. 1 Dora Roberts, SW NE Sec. 136, Blk. 29, W.&N.W.R.R. Sur. ..... Pay 2,950-77 ft.; 2,400 ft. fluid; testing.
F.H.E. Oil Co.'s No. 2 Dora Roberts, Lease E, Sec. 136, Blk. 29, W.&N.W. Sur. (100 ft. N of No. 1-E) ..... Drlg. 1,895 ft.
Gulf Prod. Co.'s No. 1 H. R. Clay, 2,130 ft. SE, 150 ft. E of NW cor. Sec. 155, Blk. 29, W.&N.W. ..... Location.
Godley Oil Co.'s No. 4 A. J. Hooks, Sec. 140, Blk. 29, W.&N.W. Sur. ..... Drlg. 1,490 ft.
Green O. & R. Co.'s No. 1 H. R. Clay, SE cor. Sec. 127, Blk. 29, W.&N.W. Sur. ..... Shut down for orders 945 ft.
Henshaw et al's No. 1 W. R. Settles, SW SE SW Sec. 135, Blk. 29 ..... Top pay 2,349-60 ft.; bit in hole; shut down 2,519 ft. for orders; hole full of oil.
Lockhart et al's No. 2 Dora Roberts, Sec. 157, Blk. 29, W.&N.W. Sur. ..... Material on ground.
Magnolia Pet. Co.'s No. 7 Dora Roberts, SW NE SW Sec. 136, Blk. 29, W.&N.W. Sur. ..... Drlg. 1,198 ft.
Magnolia Pet. Co.'s No. 8 Dora Roberts, NW SW SW Sec. 136, Blk. 29 ..... Rig.
Mays, Nixon & Flowers' No. 1 W. J. Flowers ..... Little salt at 976-97 ft.; top salt 1,114 ft.; shut down 2,517 ft., contract depth.
Merrick & Lamb's No. 4 H. R. Clay, CSL SE NE Sec. 126, Blk. 29, W.&N.W. Sur. ..... Location.
Miley and Marland Oil Co.'s No. 1 C. D. Read, C NW Sec. 12, Blk. 31, T.&P. Sur., T-1-N ..... Spudded and shut down 5 ft.
Owen & Sloan's No. 4 Dora Roberts, Sec. 136, Blk. 29 ..... Rigging up machine 2,000 ft.
Sprague Oil Co.'s No. 1 Roberts ..... Spudded and shut down.
Sun Oil Co.'s No. 2 W. R. Settles, NW SE SE Sec. 135, Blk. 29 ..... Underreaming 12¼-in. 950 ft.
Sweeney et al's No. 3 Chalk, Sec. 124, Blk. 29 ..... Location.
Sweeney et al's No. 4 Chalk, Sec. 124, Blk. 29 ..... Location.
Sweeney et al's No. 6 Chalk, Sec. 124, Blk. 129, W.&N.W. Sur. ..... Rig up and shut down.
Texon O. & L. Co. and Marland Oil Co.'s No. 2 W. R. Settles ..... Top lime 2,030 ft.; total depth 3,504 ft.; plugged back to 1,316 ft.
Texon and Marland's No. 3 W. R. Settles, C NE Sec. 160, Blk. 29, W.&N.W. Sur. ..... Shut down 1,459 ft.; hole full sulphur water 1,370-1,440 ft.
Texon and Marland's No. 2 W. R. Settles-A ..... Drlg. 1,100 ft.
Weekly Oil Corp. et al's No. 1 Dora Roberts, Sec. 156, Blk. 29 ..... Top lime 2,090 ft.; oil show 2,425-38 ft.; pulling casing total depth 3,505 ft.; plugged back 1,900 ft.

HUDSPETH COUNTY

American Land Co.'s No. 1 Lockhart and Roseborough, C SE Sec. 5, School Blk. 21 ..... Shut down 260 ft.
Western States Oil Co.'s No. 1 Moore, C SE Sec. 16, Blk. 71, T.&P. Sur. T-6 ..... Standardizing at 1,920 ft.
Western States Oil Co.'s No. 1 Gardner & Moseley, NE NW Sec. 12, Blk. 18 ..... Drlg. gray lime 2,170 ft.

IRION COUNTY

Empire's No. 1 Sawyer Cattle Co., Sec. 186, Blk. 1, T.&P.R.R. Sur. ..... Location.
P. F. Hill's No. 1 Horney, 150 ft. S and 450 ft. W of NE cor. SW of Sec. 2, Blk. 3, H.&T.C. Sur. ..... Pulling pipe to abandon 1,725 ft.
Kimbrough & Tuel's No. 1 J. M. Nutt, 1,920 ft. S, 200 ft. E of NW cor. Sec. 5, Gonzales Co. School Land ..... Drlg. 600 ft.
L. P. Powell et al's No. 1 Harlan Horney, 2,130 ft. N, 1,170 ft. E SW cor. Sec. 2, Blk. 3, H.&T.C. Sur. ..... Fishing 320 ft.
F. E. Webb et al's No. 1 J. M. Nutt ..... Drlg. 1,035 ft.
Wesley West et al's No. 1 J. D. Suggs, SE NW SE Sec. 19, Blk. 7, H.&T.C. Sur. ..... Spudded; shut down.

JEFF DAVIS COUNTY

J. K. Hughes Dev. Co.'s No. 2 Means ..... Fishing for bit 2,767 ft.
Humble O. & R. Co.'s No. 2 Crecencio Flores, 1,130 ft. N and 850 ft. E of SW cor. Sec. 34, Blk. 58, T.&P. Sur., Twp. 8 ..... Drlg. 4,910 ft., gray lime.

JONES COUNTY

Hurley Oil Co.'s No. 1 W. L. Gunther, 1,650 ft. from E and 330 ft. from N of SW Sec. 34, Blk. 18, T.&P.R.R. Sur. ..... Location.
Roeser & Pendleton & Stebbins O. & G. Co.'s No. 2 G. H. Higgs, Sec. 30, W. T. Scott Sur. No. A-310 (NE of No. 1) ..... Spudded and shut down.
J. N. Sloan and others' No. 1 W. C. Bennett, NW cor. SW SE Sec. 42, Orphan Asylum Land ..... Spudded and shut down.
W. G. Stough and others' No. 1 J. P. Willis, J. C. Patterson Sur. No. 2 ..... Shut down 1,740 ft.
Teas & Wheeler's No. 1 Henry Sayles, C NE 34 acres, Sec. 3, Blk. 20, T.&P.R.R. ..... Shut down 1,385 ft. for fuel.

KENT COUNTY

J. S. Cosden & Co.'s No. 1 N. V. Bilby, Sec. 56, Blk. 98, H.&T.C. Sur. ..... Material on ground.

KNOX COUNTY

Deep Rock Oil Co.'s No. 1 Moore ..... Shut down 2,495 ft. for repairs.
Deep Rock Oil Co.'s No. 1 Big Four, 1,270 ft. S and 2,500 ft. W of NE cor. Sec. 21, Blk. 4 ..... Shut down 4,516 ft.; hole full of water.

LOVING COUNTY

Delaware Oil Co.'s No. 1 Lockhart & Ramsey ..... Top salt 780 ft.; total depth 4,426 ft.; plugged back 4,371 ft.; 1,200 ft. fluid in hole; cleaning out.
Lockhart & Co.'s No. 1 Bower & Wells, 330 ft. each way from NW cor. Sec. 92, Blk. 1, W.&N.W. Sur. ..... Cellar.
Lockhart Bros.' No. 2 fee, 330 ft., 3,630 ft. W SE cor. Sec. 85, Blk. 33, H.&T.C. Sur. ..... Top salt 687 ft.; drlg. 3,300 ft.
Lockhart & Co.'s No. 1-A Lepp, Sec. 85, Blk. 33 ..... Fishing 3,898 ft.

LYNN COUNTY

Elpo Oil Co.'s No. 1 Nevois, NW cor. Sec. 6, Blk. C-42, School Lands ..... Shut down 2,376 ft. for fuel oil.
Hart Oil Corp.'s No. 1 C. O. Edwards A-1 ..... Rig.

MARTIN COUNTY

Phillips Pet. Co.'s No. 1 C. C. Slaughter, SE cor. Sec. 77, Bauer & Cockrell Sur. ..... Total depth 470 ft.; cleaning out 100 ft. off bottom.

MENARD COUNTY

Carpenter & Robbins' No. 1 Kothman, NW cor. SW SW Sec. 22 ..... Shut down 600 ft.
Carpenter & Robbins' No. 2 Kothmann, 450 ft. W 150 ft. N SE cor. SW Sec. 22, J. P. Kuhlman Sur. ..... Drlg. 615 ft.
J. C. Barnett and T. H. Drake's No. 1 Callan City Co. Ranch, Sec. 22 ..... Shut down 850 ft.
May & Clark's No. 1 Collen, Sec. 22, B.S.&F. ..... Shut down 505 ft.
Moody Oil Corp.'s No. 1 G. S. Allison, SE cor. Johann Kuhler Sur. No. 1,473 ..... Shut down 1,570 ft.
Panhandle O. & R. Co.'s No. 1 G. P. Eckardt, C SW Sec. 10, Blk. 2, T.W.N.G.R.R. Sur. ..... Spudding; shut down.
Renfro et al's No. 1 J. Davis ..... Drlg. 430 ft.
Sabiens & Bevens' No. 1 F. Wilhelm, C Sec. 28, Indianola R. R. Co. Sur. ..... Shut down 100 ft.
Sorrels & Jackson's No. 1 F. Wilhelm, C NE Sec. 6, Blk. C, Brooks & Borleson Sur. ..... Shut down 40 ft.

MIDLAND COUNTY

Gholson et al's (was Orbit Oil Co.'s) No. 1 Moreland, C SE Sec. 17, Blk. 39, T.&P. Sur., T-1-S ..... Top salt 1,910 ft.; shut down 3,510 ft., contract depth.
Shoup et al's No. 1 Roy Parks ..... Top salt 1,700 ft.; drlg. 1,845 ft., red rock.

MITCHELL COUNTY

Boehm Drilling Co.'s No. 1 Harry Hyman, C NW SE Sec. 90, Blk. 29, W.&N.W. Sur. ..... Shut down 505 ft.
California Co.'s No. 5 Foster, Sec. 6, Blk. 29, T-1-S ..... Drlg. 300 ft.
Owen & Sloan's No. 1 Brown, NE cor. Sec. 81, Blk. 26, T.&P. Sur. ..... Drlg. 520 ft.; oil show 420 ft.
Robert Thraves' No. 1 C. Way, Sec. 91, Blk. 27, T.&P. Sur., T-1-N ..... Total depth 2,503 ft.; shut down.

PECOS COUNTY

Alexander & Lyle's No. 1 Myrtle Sellman, C SW SE Sec. 20, Blk. Z, T.C. Ry. Sur. ..... Spudding.
Amerada Pet. Corp.'s No. 1 R. C. Dillon, C SW Sec. 28 Blk. 140, T.&St.L. Sur. ..... Location.
George Anderson's No. 1 University, C Sec. 11, Blk. 17 ..... Top salt 1,030 ft.; shut down 1,880 ft.
Batesman & Price's No. 1 Pecos River Bed, 150 ft. N and W of NE cor. Sec. 29, Blk. 12, H.&G.N. Sur. ..... Drlg. 122 ft.
Benedum & Trees' No. 1 B. T. Corder ..... Shut down 494 ft.
Bob Elmore's No. 2 Holmes, SE cor. Sec. 45, Blk. 1, I.&G.N. Sur. ..... Top salt 435 ft.; drlg. 1,240 ft.
Buell & Hagan's No. 1 Pryor & Wilson, Sec. 15, Blk. 5 ..... Top salt 1,445 ft.; shut down 2,508 ft.
California Co.'s No. 3 Mrs. M. A. Smith, Lease 1, 990 ft. from S line and 330 ft. from E line Sec. 37, Blk. 194, G.C.&S.F. Sur. ..... Rigging up.
Cosby Pet. Co.'s No. 1 Smith, Sec. 24, Blk. 194, G.C.&S.F. ..... Location.
Diamond Pet. Co.'s No. 1 Blackstone & Slaughter, C E half Sec. 28, Blk. A-2 ..... Drlg. 700 ft.
M. C. Dibble & Hale's No. 1 Bonebrake, Sec. 115, Blk. 9, H.&G.W. Sur., elev. 2,555 ft. ..... Shut down 1,170 ft.

VICTAULIC COUPLINGS

"For every joint on the line"

THE GROUND is swampy and uneven at Sparkill, N. Y., where this 12 inch oil line was laid. Uneven settling of the line could be normally expected. So Victaulic Couplings were selected for the installation. They provide flexibility at every joint.

* * *

Victaulic Couplings assure flexibility and remain leak-proof under severe vibration, line sag, pressure shocks or shifting the line sideways under full pressure load.

They give a strain-free line that does not buckle or pull apart under severe conditions of contraction and expansion because each Victaulic Coupling is an expansion joint for the pipe lengths it connects.

Victaulic Couplings save time, labor and money on every mile of pipe laid because it takes unskilled labor less than two minutes to install a Victaulic Coupling. The coupling cannot go together wrongly. Pipe costs and pipe transportation costs are less when Victaulic Couplings are specified.

12" oil line through swamp.

Victaulic Couplings are supplied for all pipe sizes from ¾ inch up to steel, wrought iron and cast iron pipe, for all pressures from vacuum to 10 tons pressure per square inch. Victaulic Fittings make it easy to connect a Victaulic-coupled line with any existing line.

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The all-purpose pipe coupling "For every joint on the line"

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Ditto Oil Co.'s No. 1 J. M. Montgomery, Sec. 104, Blk. 331, A-6,387 ..... Drlg. 100 ft.
Douglas Oil Co.'s No. 2 Myrtle Sellman, Sec. 14, Blk. Z, T.C.R.R. Sur. ..... Hole full salt water 795-860 ft.; 25 ft. sulphur water 1,614-15 ft.
Furman Oil Co.'s No. 1 T. W. McNear, Jr., Sec. 16, Blk. 8 ..... Moving in material.
Everett et al's No. 1 J. Fields ..... Spudded and shut down.
Kirby Pet. Co.'s No. 1 University, NE cor. Sec. 36, Blk. 24, University Land ..... Top lime 1,305 ft.; shut down 1,386 ft.
Mazda Oil & Gas Co. and Savoy's No. 2 M. A. Smith, 870 ft. S and 330 ft. E of NW cor. of their lease, Sec. 24, Blk. 194, G.C.&S.F. ..... Rigging up.
Mid-Kansas O. & G. Co.'s No. 1 Pryor & Wilson, NW cor. Sec. 3, Blk. 5, T.C.R.R. Sur. ..... Top salt 1,455 ft.; drlg. 3,075 ft.
McDonald et al's No. 1 A. A. Parsell, C NW SE Sec. 28, Blk. A, G.C.&S.F.R.R. Sur. ..... Shut down 100 ft.
Phillips Pet. Co.'s No. 1 Nutt, SE cor. Sec. 8, Blk. 125 ..... Shut down 450 ft.
R. J. Sikes' No. 1 George Brown ..... Shut down 700 ft.
Roxana Pet. Corp. and Kirby Pet. Co.'s No. 1 University, Sec. 23, Blk. 26 ..... Shut down 355 ft.
Southern C. O. Co.'s No. 1 Scharbauer Cattle Co., SW cor. Sec. 21, Blk. 134, T.&St.L. Sur. ..... Setting 12-in. casing 990 ft.
Stidham & Thrasher's No. 1 Belcrade Ranch Co., Sur. 3, Mrs. S. Tompkins A-4,695 ..... Flowing sulphur water; shut down 2,020 ft.
Transcontinental Oil Co.'s No. 1 University, NE NW SW Sec. 18, Blk. 18 ..... Top lime 1,155 ft.; drlg. 2,283 ft.
Vacuum Oil Co.'s No. 1 Elsinore Cattle Co., Sec. 60, Blk. D, G.C.&S.F. Sur. ..... Drlg. 2,743 ft.; underreaming.
World Oil Co.'s No. 1 Kloh, Sec. 47, Blk. 45, Twp. S, T.P.R.R. Sur., elev. 2,810 ..... Total depth 1,310 ft.; reaming 10-in.
World Oil Co.'s No. 1 Serf, C NE Sec. 10, Blk. 130, T.&St.L. Sur., elev. 3,435 ft. ..... Total depth 3,255 ft.; underreaming 6-in. casing.

PRESIDIO COUNTY

Phillips Pet. Co., Empire G. & F. Co., Delmar Oil Co. and C. E. Miller's No. 1 Tootle Est., C NE Sec. 75, Blk. 3, D.&P.R.R. Sur. ..... Moving in material.

REAGAN COUNTY

California Oil Co.'s No. 4 University, NW cor. Sec. 3, Blk. 7 ..... Top salt 1,340 ft.; total depth 3,096 ft.; est. 12 bbls. per day; top pay 3,092 ft.
Moody Oil Corp.'s No. 1 R. A. Walters ..... Spudding and shut down.
Roxana Pet. Corp.'s No. 1 University, NW cor. Sec. 30, Blk. 11, University Lands ..... Drlg. 1,680 ft.
Skelly Oil Co.'s No. 2 University, SE SW SE Sec. 35, Blk. 8 ..... Drlg. 3,158 ft.; top lime 3,081 ft.; sulphur water 3,150 ft.
Texon O. & L. Co.'s No. 1-B University, Group 1 ..... Top pay 6,250 ft.; 2,000 ft. oil; rig burned; shut down 8,220 ft.
Texon O. & L. Co.'s No. 1 University-McBurnett, 330 ft. S and E of NW cor. Sec. 11, Blk. 7, Univ. Land ..... Spudding.

REEVES COUNTY

Exploration Co.'s No. 1 A. A. Kinney, 1,500 ft. W of NE cor. Sec. 26, Blk. C-18, Public School Land, elev. 2,847 ft. ..... Drlg. 2,350 ft.
Grisham-Hunter Corp.'s No. 1 Rathge & Connor, 600 ft. from N line and 5,760 ft. from W line of Sec. 26, Blk. 2, E.&G.N. Sur. ..... Top salt 1,037 ft.; running 6⅝-in. 3,938 ft.
David R. Thompson's No. 1 A. A. Eddins ..... Shut down 5,499 ft. for casing.
World Oil Co.'s No. 1 A. L. Duff, 1,500 ft. from S line, 850 ft. from NE line, Johnson Sur. No. 68, elev. 2,774 ft., contract depth 4,000 ft. ..... Moving in material.

RUNNELS COUNTY

Agnew & Sons, Inc., No. 1 R. R. Russell, in Mrs. H. Hollen. Sur. No. 13½ ..... Drlg. 1,175 ft.
Gibson & Johnson's No. 1 W. H. Rainwater, 660 ft. N and E of SW cor. of J. H. San Miguel Sur. (cor. location for No. 1 Harris) ..... Rigging.
Jones Oil Syndicate's No. 1 W. Hale ..... Shut down 2,210 ft.
McLean et al's No. 1 G. W. Clayton t ..... Shut down 1,050 ft.
Marland Oil Co.'s and E. L. Smith Oil Co.'s No. 1 A. C. Herring, C Sec. 121, E.T.R.R. Sur. (3,000-ft. test) ..... Drlg. 1,325 ft.
Marland Oil Co.'s No. 1 R. R. Russell, near CSL J.F.G. Sur. ..... Underreaming 8¼-in. 2,190 ft.
Kennedy et al's No. 1 J. E. Tally ..... Shut down 2,430 ft.
May et al's No. 1 J. M. Schneider, John Wall Sur. ..... One-half bailer salt water 1,033 ft.; hole full water 1,100-20 ft.; fishing 1,775 ft.
Miles Oil Co.'s No. 1 Charles Ray, Sec. 21, T.&N.O. Sur. ..... Cellar and machine.
Miles Oil Co.'s No. 1 L. S. Lawhon, NE cor. Sec. 68 ..... Show gas 960-80 ft.; shut down 2,450 ft.
Royal Pet. Co.'s No. 1 A. C. Willingham ..... Shut down 1,720 ft.
R. B. Summers et al's No. 1 J. W. Reese, M. J. Parramore Sec. No. 26 ..... Drlg. 1,135 ft.
Swensondale Oil Co.'s No. 1 E. A. Werner ..... Drlg. 3,370 ft.
Vacuum Oil Co., Lou Ladd et al's No. 1 J. S. Flanagan, NW cor. Subdivision No. 29, Domingo Diaz Sur. No. 532 ..... Drlg. 240 ft.
Vacuum Oil Co. et al's No. 1 H. B. Fowler, Subdivision No. 23, Domingo Diaz Sur. No. 532 ..... Fishing.
Watchorn O. & G. Co.'s No. 1 J. L. King ..... Top gas 3,475 ft.; 3,000,000 ft. gas; drlg. 3,606 ft.

SCHLEICHER COUNTY

Beavers & Leath et al's No. 1 J. A. and W. T. Whitten, C NW Sec. 35, Blk. 11, T.O. Sur. ..... Shut down 400 ft.
J. F. Long and O. C. Long's No. 1 W. H. Williams, NE cor. Sec. 28, H.E.&W.T.R.R. Sur. ..... Rigging cable tools.

SCURRY COUNTY

J. B. Mims et al's No. 1 J. J. Koonsman, Sec. 216, Blk. 2, H.&T.C. Sur. ..... Rig.

STERLING COUNTY

Manhattan Oil Co., Hucony Gas Co. et al's No. 1 Elwood, 2,640 ft. W. 250 ft. N SE cor. Sec. 14, Blk. 2, H.&T.C. Ry. Sur. ..... Building rig.
Orr et al's (to be taken over by Empire G. & F. Co.) No. 1 Neal Reed, CNL Sec. 15, Blk. 30, W.&N.W. Sur. ..... Shut down 1,390 ft. (cor.).

STONEWALL COUNTY

Henshaw Oil Corp.'s No. 1 W. P. Moore, Sec. 136, Blk. 1, H.&T.C. Sur. ..... Drlg. 1,425 ft.

SUTTON COUNTY

J. D. Nantz et al's No. 1 G. Allison, C NE Sec. 29, Blk. B, H.E.&W.T.R.R. Sur. ..... Shut down 126 ft.
National Potash Co.'s No. 1 J. N. Ross ..... Shut down shale 1,329 ft.

TERRELL COUNTY

Big Bend Oil Co.'s No. 1 Bassett ..... Location.
Champlin Ref. Co.'s No. 1 Corder, C Sec. 110, Blk. 1, C.C.S.D. Sur. ..... Shut down 2,550 ft.
Deep Rock Oil Co.'s No. 1 H. C. Nolke, Sec. 4, Blk. A-2, T.C.R.R. Sur. ..... Drlg. 2,500 ft.
Humble Oil Co.'s No. 1 University, Sec. 15, Blk. 34 ..... Drlg. 3,275 ft.
Keck Pecos Trust Co.'s No. 1 Hamilton, C Sec. 6, Blk. D-7, E.L.&R.R. Sur. ..... Rig.
Milham Exploration Co.'s No. 1 Bassett, Sec. 77, Blk. Y, W. E. Robertson Sur. ..... Drlg. 2,425 ft.
Woodley & Jones' No. 1 Pankenham, C SE NW Sec. 43, Blk. B-2, C.C.S.D.R.G.&N.G.R.R. Sur. ..... Rig.

TERRY COUNTY

Kingsland O. & P. Co.'s No. 1 Brownfield, C NW SW SW Sec. 7, Blk. 1-A, E.L.R.R. Sur. ..... Shut down 4,008 ft.; contract depth.

TOM GREEN COUNTY

Collins et al's No. 1 Jones, CSL Sec. 646, Shaffer Sur. ..... Rig.
Cox et al's No. 1 Llano ..... Shut down 845 ft.
Fitzgerald & Taliaferro's No. 1 Bennett ..... Shut down 1,955 ft.
Lone Eagle Oil Co.'s No. 1 Sharp, SE W Elzel Sur. No. 167 ..... Spudded and shut down.
McLaughlin & Ridge's No. 1 R. Q. Holder, 3,440 ft. N and 80 ft. W SE cor. J. P. Parker Sur. (3,000-ft. test) ..... Drlg. 710 ft.
Tulsa Oil Co.'s No. 1 Adams, C SW Sec. 163, Blk. 11, S.P.R.R. Sur. ..... Shut down 1,020 ft.
Haubelt et al's No. 1 Johnson ..... Shut down 1,205 ft.
World Oil Co.'s No. 1 Mrs. F. T. March ..... Location.

UPTON COUNTY

Mark Curtis et al's (was Hultz et al's) No. 2 Giddings, 5,336 ft. S and 6,678 ft. E of NW cor. Throckmorton Co. School Land, League 1, elev. 2,757 ft. ..... Shut down 975 ft.
Penn and Atlantic's No. 1 Live Stock Exchange, Sec. 34, Blk. 38 ..... Top salt 1,580 ft.; drlg. 2,440 ft., red rock and anhydrite.
Wise & Jackson's No. 1 J. H. Porter, SW cor. SW SW Sec. 184, Blk. E, elev. 2,592 ft. ..... Top pay 3,419 ft.; total depth 3,517 ft., gray lime; shut down.
Zoch and others' No. 1 Murphy, Sec. 1, 660 ft. from S line and 1,320 ft. from W line, G.C.&S.F. ..... Location.
Zoch's No. 1 Union Land, Sec. 13, Blk. 36, 1,980 ft. from N and E lines, E.&T.C. ..... Location.

VAL VERDE COUNTY

A. Blume et al's No. 1 Moore Est., Sec. 183, J. Mitchell Sur., elev. 953 ft. ..... Shut down 3,000 ft.
Curso Williams' No. 1 Holman, NE NE Sec. 5, Blk. N, G.H.&S.A. Sur. ..... Shut down 2,940 ft.
East Del Rio Oil Co.'s No. 1 Russell, SE cor. Sec. 183, Del Rio Town Sur., elev. 941 ft. ..... Shut down 3,320 ft.
Independent Operators' No. 1 Whitehead, SE SE Sec. 30, Blk. 4, I.G.&N. Sur., elev. 1,175 ft. ..... Shut down 3,900 ft.
O. O. Owens' No. 1 Mills, Sec. 128, Blk. 1, I.&G.N. Sur., elev. 2,130 ft. ..... Gas sand 2,491-2,526 ft.; tested 125,750 ft. gas; reset 8-in. 2,511 ft.; shut down 4,210 ft.
W. B. Thraves et al's No. 1 W. E. Wilson ..... Shut down 930 ft.

WARD COUNTY

Alfredo Del Cambre's No. 1 Lee Monroe, Sec. 50, Blk. 33, H.&T.C. Sur. ..... Spudded and shut down 65 ft.
Denver ?. & R. Co.'s No. 1 Cherokee Land & Investment Co., 990 ft. from NEL and 2,310 ft. from SEL Sec. 215, Blk. 34, H.&T.C. Sur. (4,000-ft. test) ..... Total depth 775 ft.; driving 12½-in. casing.
E. H. Devore et al's No. 1 Black, Sec. 214, Blk. 34, H.&T.C. Sur. ..... Spudded and shut down.
Estex Oil Co.'s No. 1 W. A. Estes, C SW NE Sec. 4, Blk. B-29 (3,500-ft. test) ..... Top salt 645 ft.; drlg. 1,000 ft.
Rector Oil Co.'s No. 1 State, 990 ft. from NEL and NWL Sec. 30, Blk. 4, H.&T.C. Sur. ..... Spudded and shut down.
Selby Oil Co. et al's No. 1 A. G. Dooley et al, Sec. 85, Blk. A, G.M.M.&A. Sur. ..... Total depth 2,646 ft.; set 6⅝-in. casing.

WINKLER COUNTY

Amerada Pet. Corp.'s No. 1 J. B. Walton, SW cor. NW Sec. 45, Blk. 26, elev. 2,833. ft ..... Fishing 2,502 ft.; making 50,000,000 ft. gas.
Atlantic O. P. Co.'s No. 2 Hendricks-G, 440 ft. S. 330 ft. E NW cor. Sec. 46, Blk. 26 ..... Drlg. 250 ft.
Atlantic and Collett's No. 7 Hendricks-F, Sec. 40, Blk. 26 ..... Rigging up rotary.
Atlantic and Collett's No. 8 Hendricks-F, Sec. 40, Blk. 26 ..... Cellar.
Atlantic O. P. Co.'s and Collett's No. 3 Hendricks-F, NW NE NW Sec. 40, Blk. 46 ..... Top salt 1,827 ft.; cem. 8¼-in. casing at 2,380 ft.
Atlantic and Collett's No. 5 Ida Hendricks-F, SE SW NW Sec. 40, Blk. 26 ..... Top lime 2,435 ft.; cem. 8¼-in. 2,436 ft.
Atlantic and Collett's No. 6 Ida Hendricks-F, SW SE NW Sec. 40, Blk. 26 ..... Top salt 1,302 ft.; cem. 8¼-in. at 2,377 ft.
V. T. Bolin et al's No. 1 Brown ..... Fishing 2,702 ft.
Cranfill & Reynolds' No. 1 Hendricks-D, SW NW NW Sec. 33, Blk. 26 ..... Drlg. 2,005 ft.
Cranfill & Reynolds' No. 1 E. Hendricks, SE SE NW Sec. 33, Blk. 26 ..... Location.
Danciger et al's No. 1 John Sealy, SW cor. NE Sec. 93, Blk. A, G.M.M.B.&A. Sur. ..... Top salt 1,085 ft.; drlg. lime and anhydrite 3,000 ft.
Gibson-Johnson and Kesslar & Logan's No. 1 Daugherty, C SW Sec. 3, Blk. 74 ..... Top salt 1,980 ft.; cored porous gray lime 3,159-67 ft.; est. to be good for 10,000 bbls. daily; some water showing.
Humble O. & R. Co.'s No. 1 Hendricks-B, NE NW SW Sec. 39, Blk. 26 ..... Drlg. 588 ft.
Humble O. & R. Co.'s No. 2 Hendricks-B, NW NE SW Sec. 39, Blk. 26 ..... Drlg. 457 ft.
Humble O. & R. Co.'s No. 2 Hendricks-C, SE NE SE Sec. 32, Blk. 26 ..... Drlg. 2,260 ft.
Humble O. & R. Co.'s No. 3-B T. G. Hendricks, 440 ft. N and 330 ft. E of SW cor. Sec. 39, Blk. 26 ..... Location.
Humble O. & R. Co.'s No. 3 Hendricks-C, SE NE NE Sec. 32, Blk. 26 ..... Drlg. 820 ft.
Humble O. & R. Co.'s No. 4 Hendricks-C, SE cor. NE Sec. 32, Blk. 26 ..... Drlg. 1,695 ft.
Humble O. & R. Co.'s No. 5 Hendricks-C, NE cor. SE Sec. 32, Blk. 26 ..... Drlg. 1,710 ft.
Humble O. & R. Co.'s No. 6 Hendricks-C, NE cor. Sec. 32, Blk. 26 ..... Drlg. 333 ft.
Humble O. & R. Co.'s No. 1 J. B. Walton-B, SE cor. N half Sec. 47, Blk. 26 ..... Drlg. 814 ft.
Humble O. & R. Co.'s No. 1 J. B. Walton-A, NW cor. Sec. 48, Blk. 26 ..... Derrick.
Liner Drlg. Co.'s No. 1 Seth-Campbell, NE cor. Sec. 2, Blk. B-5 ..... Shut down 450 ft.
Landreth and Roxana's No. 1 E. W. Cowden-A, NW cor. Sec. 3, Blk. 12 ..... Top pay 2,511 ft.; top lime 2,430 ft.; rigging up standard tools.
Landreth & Roxana's No. 3 Hendricks, 1,320 ft. S and 330 ft. E of NW cor. Sec. 45, Blk. 26 ..... Location.
Landreth Prod. Co.'s No. 1 T. G. Hendricks-B, NW cor. E half NE Sec. 40, Blk. 26 ..... Top salt 1,495 ft.; fishing 2,204 ft.
Landreth and Roxana's No. 2 Hendricks-B, SE cor. E half NE Sec. 40, Blk. 26 ..... Total depth 772 ft.; setting 12½-in. casing.
Landreth and Roxana's No. 1 T. G. Hendricks-C, NE NW SW Sec. 40, Blk. 26 ..... Drlg. 2,278 ft.
Landreth Prod. Co. and Roxana's No. 2 T. G. Hendricks-C, 2,200 ft. N and 330 ft. E of SW cor. Sec. 40, Blk. 26 (cor. loc.) ..... Rigging rotary.
Landreth Prod. Co. and Roxana's No. 2 T. G. Hendricks-D, 440 ft. N and 330 ft. W of SE cor. Sec. 40, Blk. 26 ..... Spudding.
Landreth and Roxana's No. 1 Hendricks-D, NE cor. E half SE Sec. 40, Blk. 26 ..... Setting 12½-in. casing 822 ft.
Landreth and Roxana's No. 1 Hendricks-E, SE cor. W half NW Sec. 39, Blk. 26 ..... Drlg. 470 ft. sand.
Llano Oil Co.'s No. 1 Armstrong, common cor. Secs. 13, 12, 18, 19, Blk. B-5 ..... Location.
Marland Oil Co.'s No. 1 T. G. Hendricks, SE cor. W half Sec. 33, Blk. 26 ..... Top lime 2,373 ft.; top pay 2,758 ft.; initial prod. 75 bbls. hr. through 2⅝-in. casing; choked; total depth 2,760 ft.
Marland Oil Co.'s No. 2 T. G. Hendricks, NE SE SE Sec. 33, Blk. 26 ..... Cellar.
Marland Oil Co.'s No. 3 T. G. Hendricks, NE SE SW Sec. 33, Blk. 26 ..... Top lime 2,635 ft.; top pay 2,759 ft.; made 370 b ls. first hour; shut in for pipe line connections.
Marland Oil Co.'s No. 4 T. G. Hendricks, SW NE SW Sec. 33, Blk. 26 ..... Drlg. 1,600 ft.
Marland Oil Co.'s No. 5 T. G. Hendricks, NW NE SW Sec. 33, Blk. 26 ..... Shut down.
Marland Oil Co.'s No. 6 T. G. Hendricks, NE cor. SW Sec. 33, Blk. 26 ..... Drlg. 1,280 ft.

Marland Oil Co.'s No. 1 Hendricks-A, SE cor. Sec. 29, Blk. 26 ..... Rig.
Mining & Engineering Co.'s No. 1 T. G. Hendricks, Sec. 10, Blk B-12 ..... Hole full fresh water; shut down 1,232 ft.
Murchison Oil Co. and Cranfill Bros.' No. 1 Hendricks-H (5-acre tract), Sec. 33, Blk. 26 ..... Top lime 2,403 ft.; shut down 2,725 ft.; core at 2,720-25 ft. showed tight lime showing little oil.
Prairie O. & G. Co.'s No. 1 T. G. Hendricks, NW cor. E half SW Sec. 40, Blk. 26 ..... Drlg. 2,290 ft.
Prairie O. & G. Co.'s No. 2 Hendricks, Sec. 40, Blk. 26 .. Rig.
Sid Richardson, Frank Kelsey and White Eagle O. & R. Co.'s No. 1 Stockton Cattle Co. (O'Brien), 330 ft. S and W of NE cor. Sec. 50, Blk. F, G.M.M.B.&A. Sur. ..... Material on ground.
Sheldon & Burden's No. 1 Ida Hendricks, SW cor. SE Sec. 28, Blk. B-5 (10-a. tract) ..... Top salt 1,260 ft.; top pay 2,609 ft.; top pay 2,719 ft.; total depth 3,243 ft.; shut down 3,243 ft.
Skelly Oil Co.'s No. 1 Hendricks, NW cor. W half NE Sec. 40, Blk. 26 ..... Set 8¼-in. casing 2,314 ft.
Skelly Oil Co.'s No. 2 Hendricks, 330 ft. W, 440 ft. S NE cor. W half NE Sec. 40, Blk. 26 ..... Reaming 510 ft.
Skelly Oil Co.'s No. 3 Hendricks, SE cor. W half NE Sec. 40, Blk. 26 ..... Rigging.
Skelly Oil Co.'s No. 4 Hendricks, NE cor. W half SE Sec. 40, Blk. 26 ..... Rigging.
Skelly Oil Co.'s No. 5 Hendricks, 450 ft. N and 330 ft. E of SW cor. W half SE Sec. 40, Blk. 26 ..... Rigging.
Skelly Oil Co.'s No. 1 Hendricks-B, SW cor. E half NW Sec. 33, Blk. 26 ..... Rig.
Southern C. O. P. Co.'s No. 3 Ida Hendricks T-67-3A, Sec. 4, Blk. B-12 ..... Reaming 2,637 ft.; drlg. 2,642 ft.
Southern C. O. P. Co.'s No. 2 T-67 Ida Hendricks-F ..... Top salt 1,715 ft.; top lime 2,635 ft.; drlg. 2,852 ft.
Southern C. O. P. Co.'s No. 3 Hendricks T-67-3B, NE NW SW Sec. 33, Blk. 26 ..... Location.
Southern C. O. P. Co.'s No. 3 Ida Hendricks T-67-B, SE NE SE Sec. 44, Blk. 26 ..... Location.
Southern C. O. P. Co.'s No. 4 Ida Hendricks T-67-B, NE SE SE Sec. 44, Blk. 26 ..... Rig.
Southern C. O. P. Co.'s No. 5 Ida Hendricks T-67-B, SE cor. SE Sec. 44, Blk. 26 ..... Derrick.
Southern C. O. P. Co.'s No. 1 Hendricks T-88-M, SW cor. SE Sec. 33, Blk. 26 ..... Top lime 2,308 ft.; rigging up standard tools.
Southern C. O. P. Co.'s No. 2 Hendricks T-88-M, NW SW SE Sec. 33, Blk. 26 ..... Drlg. 1,780 ft.
Southern C. O. P. Co.'s No. 3 Hendricks T-88-M, SE NE SW Sec. 33, Blk. 26 ..... Drlg. 2,385 ft.
Southern C. O. P. Co.'s No. 4 Hendricks T-88-M, SE NW SW Sec. 33, Blk. 26 ..... Top salt 1,630 ft.; top lime 2,438 ft.; rigging up standard tools 2,442 ft.
Southern C. O. P. Co.'s No. 5 Hendricks T-88-M, SW SE SE Sec. 33, Blk. 26 ..... Drlg. 849 ft.
Southern C. O. P. Co.'s No. 6 Hendricks T-88-M, SE SW NW Sec. 33, Blk. 26 ..... Location.
Southern C. O. P. Co.'s No. 7 Hendricks T-88-M, NE SW NE Sec. 33, Blk. 26 ..... Reaming for seat 607 ft.
Southern C. O. P. Co.'s No. 1 E. G. Hutchings T-90, NE cor. E half SE Sec. 47, Blk. 36, elev. 2,535 ft. ..... Top salt 935 ft.; top lime 2,340 ft.; fishing for stem 2,705 ft.; mixing mud to run whipstock at 2,389 ft.
Southern C. O. P. Co.'s No. 5 Hendricks T-88-A, 440 ft. S, 330 ft. W of NE cor. Sec. 44, Blk. 26 ..... Location.
Southern C. O. P. Co.'s No. 11 T. G. Hendricks T-88-M .. Location.
Winkler O. P. Corp.'s No. 1 T. G. Hendricks, NW cor. Sec. 33, Blk. 26 ..... Spudded and shut down.

WILDCAT OPERATIONS IN TEXAS PANHANDLE

(Continued from Page 39)

GRAY COUNTY

Arnold & Howell's No. 1 Turneaux, C SW, Sec. 111, Blk. B-2 ..... S.D., 759 ft.
Barker & Wetzel's No. 1 J. S. Morse, 330 ft. NE of SW cor. N ½ SW, Sec. 66, Blk. 25, H.&G.N. ..... Location.
Baldridge & Sherrin's No. 1 A. Chapman, 330 ft NW of SE cor. S 144 acres of N 304 acres of Sec. 9, E. N. Lynch Sur. ..... Location.
Baldridge & Sherrin's No. 1 A. Chapman-A, 330 ft. SW of NE SW, Sec. 10, Blk. 26, H.&G.N. ..... Location.
Biggs et als' No. 1 Morse, SW cor. Sec. 3, Blk. 26, H. &G.N. Sur. ..... 3,000,000 ft. gas, 2,158-94 ft; fish. bit, 2,220 ft.
Danciger O. & R. Co.'s No. 9 W. Jackson, NW cor. NE NW, Sec. 88, Blk. B-2 ..... Junked hole, 2,880 ft; skidded 50 ft. N; stdzng., 2,915 ft; S.D.
Danciger et als' No. 1 R. Smith, SW cor. Sec. 149, Blk. 3 ..... Location.
Danciger et als' No. 1 L. H. Webb, NW cor. NW, Sec. 62, Blk. 25, H.&G.N. Sur. ..... Rig.
Dillard et als' No. 1 Furney, NE cor. SE, Sec. 202, Blk. B-2, H.&G.N. Sur. ..... Spudding.
Delmar Oil Co.'s No. 1 F. Foster, NW cor. SW, Sec. 55, Blk. B-2, H.&G.N. Sur. ..... Drlg., 2,635 ft.
Edwards et als' No. 1 E. J. Case, NE cor. Sec. 182, Blk. B-2, H.&G.N. Sur. ..... 70,000,000 ft. gas, 2,513-2,630 ft; top G.W., 3,034 ft; 2,000 ft. oil in hole; junked hole, 3,232 ft. and S.D.
Empire G. & F. Co.'s No. 1 A. J. Dauer, NW SE SE, Sec. 236, Blk. B-2, H.&G.N. Sur. ..... Spraying 25 bbls. daily from G.W., 3,010-25 and 3,115-25 ft; drlg., 3,160 ft.
Empire G. & F. Co.'s No. 1 Holmes, C NE, Sec. 179, Blk. 3, I.&G.N. Sur. ..... Drlg., 2,090 ft.
Eslick et als' No. 1 Mrs. J. A. Hopkins, NW cor. W. 80 acres of SW¼, Sec. 84 H.&T.C. Sur., Blk. B-2 ..... Set 8-in., 2,208 ft; 6,000,000 ft. gas, 2,654-2,795 ft; cased off; show oil, 3,042-45 ft; 2,000,000 ft. gas, 3,050 ft; S.O., 3,780 ft; drlg., 3,203 ft.
Gibson Oil Corp.'s No. 9 J. B. Bowers, NE cor. Sec. 92, Blk. B-2, H.&G.W. Sur. ..... Fish. for 5-in. csg., 2,733 ft.
Gibson Oil Co.'s No. 1 G. Pierce, SE cor. Sec. 149, Blk. B-2, H.&G.N. Sur. ..... Rig.
Gulf Prod. Co.'s No. 1 M. Davidson-A, 330 ft. from S and E lines of NW cor. E half NW, Sec. 87, Blk. B-2, H.&G.N. Sur. ..... C.O., 3,060 ft.
Hardendorf Drlg. Co.'s No. 1 G. A. Henderson, NE E half NE, Sec. 47, Blk. 25, H.&G.N. Sur. ..... Drlg., 1,850 ft.
Hickory O. & G. Co.'s No. 1 Lester, SE cor. NW NW, Sec. 1, Blk. 1, A.C.H.&B. Sur. ..... 20,000,000 ft. gas, 2,170-2,310 ft; S.R. 6-in., 2,440 ft.
Holbrook et als' No. 1 J. E. Williams, SW cor. 40 acres, NE, Sec. 15, Blk. 1, A.C.H.&B. Sur. ..... Rig on ground.
Lefors Pet. Co.'s No. 2 J. M. Shaw, NW cor. T. Leach Sur ..... Cmntd. 8-in. csg., 2,470 ft.
McElroy Oil Co.'s No. 1 M. B. Davis, NE cor. S 240 acres of E half, Sec. 12, Blk. 1, A.C.H&B. Sur. ..... Drlg., 2,600 ft.
Majestic Oil Co.'s No. 6 J. B. Bowers, Sec. 59, Blk. 2-B .. S.O., 2,700 ft; show wtr., 3,450-55 ft; S.D. 4,165 ft. to repair bailer.
Magnolia Pet. Co.'s No. 2 J. B. Bowers, Sec. 63, Blk. B-2, H.&G.N. Sur. ..... Drlg., 390 ft.
Magnolia Pet. Co.'s No. 1 E. R. Eakins, SW cor. NW, Sec. 56, Blk. 25, H.&G.N. Sur. ..... Cellar.
Magnolia Pet. Co.'s No. 1 W. Harrah, NW cor. NW, Sec. 150, Blk. 2, H.&G.N. Sur. ..... Drlg., 1,700 ft.
Meade Bros.' No. 1 B. E. Fenley, SW NW SW of B. E. Chaney Sur. ..... Rig.
O. K. Oil & Gas Co.'s No. 1 Powell-Youngblood, 330 ft. SW of NE cor. SW, Sec. 28, Blk. B-2, H.&G.N.R.R. .. Location.
Operators Oil Co.'s No. 3 W. Jackson, NE NW N half NE, Sec. 88, Blk. B-2, H.&G.N. Sur. ..... Location.
Osborn et als' No. 1 E. E. Barrett, SE cor. NE, Sec. 111, Blk. 2, I.&G.N. Sur. ..... U.R. 10-in., 2,265 ft.
Osborne et als' No. 1 J. S. Morse, SW cor. SE, Sec. 1, Blk. 26, H.&G.N. Sur. ..... S.D., 1,530 ft. for pipe.
Parker et als' No. 1 Mrs. M. Parker, 990 ft. S and W NE cor. S 360 acres, Sec. 9, E. N. Lynch Sur. ..... Rig.
Parker et als' No. 2 Mrs. M. Parker, 2,310 ft. from N line, 990 ft. from E line of S 360 acres, Sec. 9, N Lynch Sur ..... Bldg. rig.
Partan et als' No. 1 J. S. Morse, NW cor. N half NE, Sec. 5 Blk. 26, H.&G.N. Sur. ..... Spudding.
Phillips Pet. Co.'s No. 4 W. Jackson, NE cor. S half NE, Sec. 88, Blk. B-2, H.&G.N. Sur. ..... Derrick.
Phillips Pet. Co.'s No. 3 Jackson-Riley, Sec. 88, Blk. B-2, H.&G.N. Sur. ..... Recmntd. 12½-in., 1,027 ft; 6,000,000 ft. gas, 2,590-2,635 ft; cmt. 8¼-in. csg., 2,857 ft; 300 ft. oil, 3,184 ft; considerable wtr., 3,325-29 ft; S.D., 3,332 ft.
Phillips Pet. Co.'s No. 4 Jackson-Riley, SE cor. W half SW, Sec. 88, Blk. B-2. ..... Drlg., 2,750 ft.
Phillips Pet. Co.'s No. 1 C. Reiger-Davidson, NW cor. Sec. 87, Blk. B-2, H.&G.N. Sur. ..... Drlg., 2,450 ft.
Plains Drlg. Co. and Ray's No. 1 C. Chapman, SE cor. SW, NW, Sec. 50, Blk. A-9, H.&G.N. Sur. ..... Pay, 2,775-77 ft; swbd. 95 bbls. 24 hrs; C.O.
Prairie O. & G. Co.'s No. 1 W. Harrah, NE cor. N 80 acres, E 240 acres, Sec. 163, Blk. 3, H.&G.N. Sur. .. Drlg., 1,200 ft.
Prairie O. & G. Co.'s No. 1 Worley & Reynolds, NE cor. SW NE, Sec. 61, Blk. 3, I.&G.N. Sur. ..... Rig.
Purple Sage Oil Co.'s No. 2 E. B. Johnson ..... 2,000,000 ft. gas; 200 ft. oil; fish., 2,870 ft; shot with 10 qts. to loosen bit and increased oil slightly.
Ray & Massie's No. 2 A. Chapman, SE cor. SW, Sec. 51, Blk. 25 ..... Drlg., 2,790 ft.
Scott & Travis No. 1 A. Chapman, 990 ft. N and W of SE cor. N half SW, Sec. 70, Blk. 25, H.&G.N. Sur. .. S.O., 2,770 ft; run 6-in. csg; drlg. 2,871 ft; another show oil.
South Bend Oil Co.'s No. 1 E. J. Case, 330 ft. NW of SE cor. N ½ W ½, Sec. 180, Blk. B-2, H.&G.N. .. Bldg. rig.
St. Clair Oil Co.'s No. 1 C. H. Rowe ..... Spudded and S.D.
St. Clair Oil Co.'s No. 1 L. S. Stockton, SE cor. Sec. 35, W. R. Lee Sur. ..... Spudded and S.D.
Shamrock Oil Co.'s No. 1 Chapman, NE E half SW, Sec. 50, Blk. 25 ..... 10,000,000 ft. gas, 2,695-2,715 ft; show oil, 2,763-73 ft; 1 bailer wtr. and little oil per hr; T.D., 3,140 ft; plugged back to 2,820 ft; putting on pump.
Shamrock Oil Co.'s No. 2 A. Chapman, NW cor. NE, Sec. 50, Blk. 25, H.&G.N. Sur. ..... Drlg., 2,500 ft.
Spartan Oil Co.'s No. 1 J. Hopkins ..... Light spray oil, 2,895-2,925 ft; G. W; T.D., 2,964 ft.
Sullivan Oil Co. et als' No. 1 M. Huselby, NW cor. E half N.W., Sec. 55, Blk. 25, H.&G.N. Sur. ..... Location.
Travis & Smith's No. 1 A. Chapman, 330 ft. SW of NE NW SW, Sec. 50, Blk. 25, H.&G.N.R.R. ..... Location.
L. R. Travis' No. 1 J. S. Morse, NE cor N. half SW, Sec. 3, Blk. 26, H.&G.N. Sur. ..... Drlg., 250 ft.
Travis et als' No. 1 A. Chapman, SW cor. Sec. 10, Blk. 26, H.&G.N. Sur. ..... Rig.
Vitek Oil Co.'s No. 1 L. Skidmore, 330 ft. NW of SE cor. SW, Sec. 164, Blk. 3, I.&G.N. ..... Location.
Wilcox-Pampa Oil Co.'s No. 28 Worley & Reynolds, SE cor. NW NE, Sec. 61, Blk. 3 I.&G.N. Sur. ..... Drlg., 360 ft.
The Texas Co.'s No. 1 M. B. Davis, SE cor. NE, Sec. 8, Blk. 1, A.C.H.&B. Sur. ..... Spray, 150 bbls. daily from G.W., 2,715-20 ft; fish. for bit.
The Texas Co.'s No. 2 C. Thut, SE NW SE, Sec. 1, H.&G.N. Sur. ..... Cmtd. 8-in., 2,060 ft.
The Texas Co.'s No. 2 Williams, C NW, Sec. 6, Blk. 1, A.C.H.&B. Sur. ..... Run. 8-in., 1,955 ft.
Tobias Oil Corp.'s No. 1 W. H. Taylor, C NE, Sec. 10, Blk. B-2 (formerly Smallwood et als') ..... T.S., 765 ft; 2,000,000 ft. gas, 2,405-80 ft; drlg., 2,665 ft.

HALE COUNTY

Bailey & Young's No. 1 Thomas, Sec. 1, Blk. J.K.L. .... S.D., 175 ft.
Donnell Pet. Co.'s No. 2 Mullican, NW cor. Sec. 66, Blk. A-3, I.&S.B. Sur. ..... Top pay in sandy shale, 495 ft; ½ bailer oil and 3 bailers wtr. per day; S.D., 620 ft.
Donnell Pet. Co.'s No. 1 Mullican, C, Sec. 21, Blk. B, R. M. Thompson Sur. ..... 200 ft. fluid in hole, 407-14 ft; S.D.
Expltn. Co.'s No. 1 Goodman ..... S.D., 350 ft.

HALL COUNTY

Briscoe Oil Assn.'s (was Seifert et als') No. 1 Owens, C NE, Sec. 179, Blk. S-5, Dennison & Pacific Sur. .. Spudded and S.D.

HANSFORD COUNTY

Caldwell et als' No. 1 J. Adriance est. ..... Drlg., 2,215 ft.
Oklavania et als' No. 1 Coots, Sec. 13, Blk. 45, H.&T. C. Sur. ..... Run. 6-in; 900 ft. wtr., 2,940 ft. drlg., 3,676 ft.

HOCKLEY COUNTY

World Oil Co.'s No. 1 Ellwood, 320 ft. from N and W lines, League 7, Wilbarger Co. school lands; elevation 3,363 ft; contract depth, 5,000 ft. ..... S.D., 1,455 ft. to install rotary.

HARTLEY COUNTY

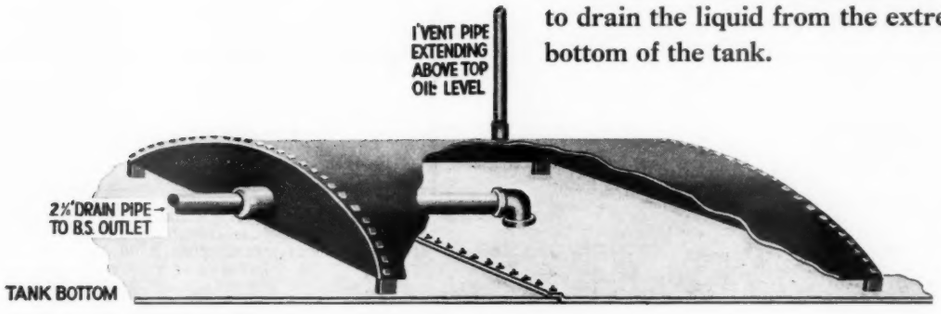
Amarillo Oil Co.'s No. 7 Lee Bivins "A," C NE, Sec. 7, Blk. 25, E.L.R.R. Sur. ..... Drlg., 200 ft.
Amarillo Oil Co.'s No. 8 Lee Bivins "A," 100 ft. E of CWL, Sec. 4, Blk. 25, E.L.R.R. Sur. ..... Drlg., 212 ft.
Amarillo Oil Co.'s No. 9 Lee Bivins "A," C NW, Sec. 6, Blk. 21 ..... Spudded and S.D.

HUTCHINSON COUNTY

Alamoso Oil Co.'s No. 2 J. M. Sanford, Sec. 83, Blk. 46, H.&TC. Sur. ..... 20,000,000 ft gas, 2,305-2,465 ft; set 8-in., 2,525 ft.
R. G. Barnum et als' No. 1 Garland Sanford, Sec. 78 Blk. 46 ..... Drlg., 1,450 ft.
Barnum & Delmar's No. 1 Johnson Bros., NW cor. E half NW, Sec. 37, Blk. Y, A.&B. Sur. ..... Drlg., 590 ft.
Friedman et als No. 1 J. O. Bost, SW cor. Sec. 9, Blk. Y-2, T.T.R.R. Sur. ..... Drlg., 1,200 ft.
Gulf Prod. Co.'s No. 40, C. L. Dial et al, 925 ft N., 463 ft. E SW cor. John W. King Sur. ..... Drlg., 2,530 ft.
Gulf Prod. Co.'s No. 41 C. L. Dial et al, Sec. 130, Blk. Z, E.L.&R.R. Sur. ..... Drlg., 2,641 ft.
Harris et als' No. 1 J. Q. Bost, Sec. 10, Blk. Y-2, T.T. R.R. Sur. ..... 90,000,000 ft gas; S.D., 2,895 ft.
Holmes & Quinn's No. 1 J. K. Quinn, SW cor. Sec. 9, Blk. 3, B.S.&F. Sur. ..... Small show oil, 3,010 ft. in lime; T.D., 3,142 ft; shot with 300 qts., 3,052-3,136 ft. in lime; swbd. 10 bbls; C.O., 3,250 ft. to shoot.
McKinney Gas Co.'s No. 1 F. P. Works, SW cor. Sec. 5, Blk. Y-2, T.T.R.R. Sur. ..... Fish., 1,865 ft.
Oil Operators Trust Co. and Mariand's No. 2 J. M. Stanford-B, Sec. 82, Blk. 46, H.&T.C. Sur. ..... S.D., 312 ft. for csg.
Phillips Pet. Co.'s No. 2 Garland, Sec. 77, Blk. 46 ..... U.R. 10-in., 2,080 ft.
Phillips Pet. Co.'s No. 12 Elva-Whittenburg, E. Tomlinson Sur. ..... T.A., 4,445 ft.
Phillips Pet. Co.'s No. 2 Chap, NE cor. E 80 acres of the S 160 acres of Sec. 78, Blk. 46 ..... C.O., 2,065 ft.
Phillips Pet. Co.'s No. 2 Land, NW cor. of E 40 acres, N 80 acres of S 320 acres, Sec. 83, Blk. 46 ..... Set 10-in., 1,983 ft; drlg., 2,080 ft.
Phillips Pet. Co.'s No. 5 Johnson Bros.-Dorsett, Sec. 64, Blk. 46, H.&T.C. Sur. ..... Rig.
Phillips Pet. Co.'s No. 6 Johnson Bros.-Dorsett, Sec. 64, Blk. 46, H.&T.C. Sur. ..... Rig.
Phillips Pet. Co.'s No. 14 J. A. Whittenburg, Sec. 63, Blk. 46, H.&T.C. Sur. ..... Rig.
Skelly Oil Co.'s No. 2 Armstrong & Byrd ..... Set 12-in. csg., 1,425 ft; cmtd. 10-in. csg., 1,553 ft; drlg., 2,900 ft; small show gas, 2,815-25 ft; 9,000,000 ft. gas, 3,015-50 ft; set 6-in., 3,272 ft; show gas, 3,383-84 ft; drlg., 3,505 ft.

new the GUIBERSON TANK DRAIN BAFFLE

The GUIBERSON Tank Drain Baffle, installed on drain pipe leading to the B. S. outlet, causes this outlet to drain the liquid from the extreme bottom of the tank.



The GUIBERSON Tank Drain Baffle, by draining the liquid from the extreme bottom of the tank, permits the removal of practically all "B. S." and water without removing any oil. By drawing from a wide area the operation is rendered quiet and uniform, and swift currents tending to stir up the tank contents are avoided.

The Baffle consists of three main parts—one main sheet and two end plates—together with necessary gaskets and bolts. The main sheet is rolled for passing through the manhole into the tank.

Assembling is done inside the tank. 1" vent pipe and 2" drain pipe to B. S. outlet are connected as shown in the illustration. The drain pipe should be long enough to place the Baffle in the center of the tank. The baffle should NOT be placed under the thief hole.

Legs of the baffle are 1" high. It may be set on 2" thread protector if desired. Patented.

"Better Be Safe Than Sorry"

THE GUIBERSON CORPORATION
Box 1106, Dallas, Texas

California Branch: 1506 Santa Fe Ave., Los Angeles

402 W. First St., TULSA
321 Osage St., PONCA CITY
506 Trust Bldg., NEWARK, O.

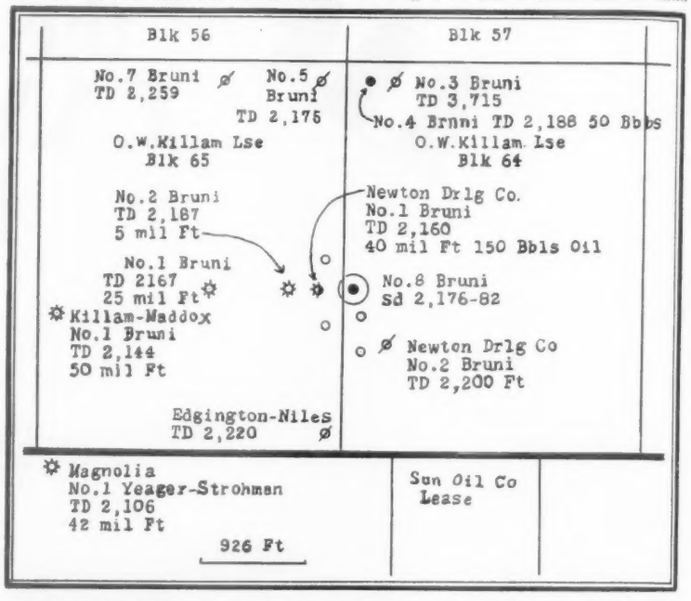
GUIBERSON
BETTER BE SAFE THAN SORRY

Skyrocket Oil Co.'s No. 1 Mrs. R. A. Jameson	800 ft. oil in hole from 3,146 ft; drilled to 3,130 ft; shot with 60 qts., 3,125-60 ft; bridged; no increase in oil after deepening; drlg., 3,236 ft.
Timms & Dietsch's No. 1 C. R. Garner, NE cor. W. 80 acres of SE, Sec. 124, Blk. 4, I.&G.N. Sur.	Drlg., 610 ft.
Wendell et als' No. 1 Johnson Bros., Sec. 1, Blk. X03	Set 10-in csg., 2,035 ft. and S.D. rig burned; rebuilding rig.
Winrod Oil Co.'s No. 1 E. Cooper, Sec. 3, Blk. 9, I.&G.N. Sur.	Drlg., 640 ft.
KING COUNTY	
Humble O. & R. Co.'s No. 1 Pitchfork, Sec. 171, Blk. A-96, John H. Gibson Sur.	Hole full wtr., 3,375 ft; drlg. by csg., 4,035 ft.
LAMB COUNTY	
Dan Freel et als' No. 1 Ellwood, CWL, Sec. 9, Blk. T, T. A. Thompson Sur.	Spudded and S.D.
LIPSCOMB COUNTY	
McCorkle's No. 1 A. Barton, NE cor. SW SE, Sec. 504, Blk. 43, H.&T.C. Sur.	Wtr. in lime, 4,126-40 ft; 6-in. set 4,155 ft; 5 3/16-in. csg. set, 4,420 ft; S.D., 4,775 ft.
Ruby Oil Co.'s No. 1 C. W. Jones, NE cor. SW, Sec. 109, Blk. 43	Show oil, 3,520 ft; T.A. 3-24-28, at 4,380 ft; S.D., 4,425 ft. (corrected depth).
LUBBOCK COUNTY	
Center Oil Co.'s No. 1 Bowles ranch	Small show oil, 1,133-40 ft. in sand; S.D., 3,003 ft.
MOORE COUNTY	
Amarillo Oil Co.'s No. 1 Thompson-Amarillo, C, Sec. 22, Blk. 26, E.L.&R.R. Sur.	Pulled rig in 2,510 ft.
Amarillo Oil Co.'s No. 1 J. T. Sneed, Jr., C W 640 A. Horace Hall Sur.	Rig.
Amarillo Oil Co.'s No. 1 D. P. Seay, C, Sec. 85, Blk. 2, G.&M. Sur.	Drlg., 1,910 ft.
Amarillo Oil Co.'s No. 1 L. H. Crawford, C SE, Sec. 26, Blk. P. M., E.L.R.R. Sur.	Drlg., 1,904 ft.
Prairie and Shamrock's No. 2 Gober, Sec. 16, Blk. M-21	T.D., 2,520 ft; recmntd. csg., 2,636 ft.
MOTLEY COUNTY	
Expltn. Co.'s No. 1 Tillson	S.D., 750 ft. for repairs.
Expltn. Co.'s No. 2 Matador Land & Cattle Co., C, SW, Sec. 37, John Gibson Sur.	S.D., 1,245 ft.
Expltn. Co.'s No. 3 Matador Land & Cattle Co., C SE, Sec. 21, Blk. O-2, W.T.R.R. Sur.	Rig.
Matador Oil Corp.'s (formerly Wheeler et als') No. 1 C. D. Bird, SW cor. NW, Sec. 4, Blk. S, Stephens Sur.	Pulled rig in 725 ft.
OCHILTREE COUNTY	
W. G. Burton's No. 1 Strickler	S.D., 4,010 ft.
POTTER COUNTY	
Amarillo Oil Co.'s No. 1 Masterson-K, C SW, Sec. 85, Blk. O-18, D.&P.R.R. Sur.	Recmtng. 12½-in. csg., 1,000 ft; show gas, 1,650 ft; T.D., 2,440 ft; S.D; 10,000,000 ft. gas showing little wtr., 1,650-60 ft. and 2,215-90 ft; run 6-in., 2,440 ft; drlg., 3,155 ft.
Amarillo Oil Co.'s No. 2 Fuqua, C NW, Sec. 18, Blk. 6, B.S.&F. Sur.	Drlg., 3,318 ft.
Amarillo Oil Co.'s No. 6 Lee Bivins-A, NW cor. NW, Sec. 32, Blk. B-11, E.L.R.R. Sur.	S.D., 550 ft.
Amarillo Oil Co.'s No. 1 Lee Bivins-E, C NW, Sec. 27, Blk. O-18, D.&P.R.R. Sur.	Spudding.
ROBERTS COUNTY	
Big Bend Oil Co.'s No. 1 Mrs. H. Ledrick & Sons, Sec. 7, Blk. 5-A	Show gas, 4,990 ft; show oil, 4,992 ft; csg. set, 4,992 ft; T.D., 5,153 ft; set 3-in., 5,155 ft; S.D., 5,240 ft.
SWISHER COUNTY	
Adams & Pritchard's No. 1 Crawford, Sec. 39, Blk. W-1, T.T.R.R. Sur.	Drlg., 445 ft.
WHEELER COUNTY	
Angus et als' No. 1 T. Trostle, C NE NW, Sec. 90, Blk. 17, H.&G.N. Sur.	Drlg., 1,500 ft.
Byrens et als' No. 1 Johnson, SW cor. NE, Sec. 88, Blk. A-5, H.&G.N. Sur.	S.D., 1,215 ft. for fuel.
Chapman & Morgan's No. 1 Otis Hatcher, NW cor. SW SE, Sec. 63, Blk. 17, H.&G.N. Sur.	Drlg., 240 ft.
Clark et als' No. 1 Mrs. J. Purcell, C NW SW, Sec. 52, Blk. 17, H.&G.N. Sur.	Rig.
Rook et als' (was Foster et als') No. 1 S. H. McDonald, SE cor. NW SW, J. N. Lindsay Sur.	T.L., 3,040 ft; set 6-in., 3,430 ft; drlg., 3,870 ft.
L. W. Rook's No. 1 M. Nelson, C SW NE, Sec. 5, Blk. 24, H.&G.N. Sur.	Spud.
L. W. Rook's No. 2 A. Smock C, SW SE, Sec. 5, Blk. 24, H.&G.N. Sur.	Rig.
Vaughn et als' No. 1 B. Woodley, C SW NW, Sec. 21, Blk. 24, H.&G.N. Sur.	Rig.
Vaughn et als' No. 1 A. Wood, C NW SW, Sec. 21 Blk. 24, H.&G.N. Sur.	Location.
Kaufold et als' No. 1 E. R. Wallace	S.D., 300 ft.
Wischkamper's No. 1 Brown-Young, C NW NE, Sec. 55, Blk. 23, H.&G.N. Sur.	Cellar.
Wischkamper's No. 1 Gooch-Close, Sec. 81, Blk. 23, H. &G.N. Sur.	Drlg., 800 ft.
Pete Woodley's No. 1 J. Boyle	Show gas, 1,700 ft; run 5-in; T. D., 2,217 ft; 1,000 ft. oil and considerable wtr., 2,173 ft; show oil, 2,238-40 ft; 500 ft. wtr; to ream 5-in. csg.

KILLAM OPENS RICH POOL WITH BIG WELL IN MIRANDO TERRITORY

SAN ANTONIO, Tex., May 14. — A new and important oil pool loomed up on the horizon in the Mirando territory last week when the O. W. Killam's No. 8 Bruni, in Block 64, of the Bruni Subdivision of the Albercas grant, 75 feet from the west line of the block and 1,470 feet from the south line started off with 345 bbls. of clean oil flowing through tubing the first 24 hours, 1,100 bbls. the second and 1,300 bbls. the third 24 hours and still increasing. Sand depth is 2,176-82 feet and total depth is 2,182 feet.

The first well in the field was Killam's No. 1 Bruni and was completed a year ago on April 22, 1927, and was a 25,000,000-foot gas well. The Southern Gas Co. pipe line crosses the lease not far from the well and this and other wells drilled since have been putting gas into the line. Newton Drilling Co.'s No. 1 Bruni, due east of the discovery gas well was completed August 3, 1927, as a gas well gauging 40,600,000 feet. The first of April this year this well started making a little oil and in a short time was making oil at the rate of about 7 bbls. an hour. The No. 4 Bruni in the northwest corner of Block 64 was completed last year as a small oil well and the Newton Drilling Co.'s No. 1 Bruni in which Killam is interested was the first important evidence of an oil field. The Killam No. 8 Bruni, located 300 feet east of it has gotten big production. The wells immediately north and south of the Newton Drilling Co.'s No. 1 Bruni are at sand depths and with casing set. The two unnumbered locations in Block 64 south of the Killam No. 8 are moving in machinery.



The location of O. W. Killam's No. 8 Bruni in Block 64 of the Bruni Subdivision, Albercas Grant, in the Mirando, Tex., area, which started at 345 bbls. but was flowing 1,300 bbls. on the third day, indicating the opening of a possibly important pool.

The location of this Albercas Field with reference to the other production in the Mirando territory will be found shown on a map in The Oil and Gas Journal of April 5, 1928, on page 68.

Slight Gains in New Work and Completions In Texas April Report

AUSTIN, Tex., May 12.—Slight gains are still being recorded in the number of instruments filed with the oil and gas division of the Texas Railroad Commission. April showed 828 notices of intention to drill in Texas filed with the commission which is the largest number since March, 1927, when it was 977. In the intervening months the number has hovered around 600 to 700 with the low mark reached in January, 1928, with a total of only 527. Total number of instruments of all kinds filed during April was 2,409 which is the largest number since April, 1927, when the number was 2,833. The decline from a peak of 1,389 notices of intention to drill filed during July, 1926, was steady and regular to the low mark of 527 in January, 1928. The increase of about 60 per cent in number of notices in April over January is very marked and worthy of attention.

There has been an increase month by month in the number of completions in Texas since the opening of the year. The low mark in the number of oil wells completed over a period of more than two years was 272 in January this year. The number of dry holes reached a low mark in the same month with a total of 201. Oil wells completed in April this year numbered 370 and dry holes 293, which is the largest number of oil wells since July, 1927, when the number was exactly the same, 370, and the number of dry holes for April was the largest since July, 1927, when the total was 315. Oil wells completed reached a peak in September, 1926, with 751 and dry holes reached a peak in August, 1926, with 455.

The record for the first four months of 1928 with some months previous for comparison, is as follows:

Month.	1928—	Notices to— Drill	Shoot	Plug
January		527	127	261
February		646	136	264
March		777	140	342
April		828	159	355
1927—				
April		815	245	369
1926—				
July		1,389	281	368

	Completed Wells — Completions			
1928—	Oil Wells	Dry	Plugged	Gas.
January	272	201	201	30
February	322	206	269	26
March	370	256	270	42
April	370	293	370	34
1927—				
April	616	358	393	37
1926—				
July	595	412	374	18

Two Abandonments, Two New Operations In E. Central Texas

MEXIA, Tex., May 12.—Two completions, both dry and abandoned, and two new operations, were reported along with drilling progress of other wells in the East Central Texas area the past week. The completed wells were in Limestone County. The Pure Oil Co.'s No. 1 Henry Unfried, Neill Survey, was abandoned at 2,888 feet. The only sand found was a salt water sand at 2,509-2,643 feet. Yost and others' No. 1 Poindexter, Flippen Block 17, was abandoned at 2,009 feet.

Pipkin and others had rotary rigged up to start No. 1 Richardson, Varella Survey, and McDonald Brothers were ready to start No. 1 Webster, Jackson Survey, both in Limestone County.

In Anderson County, the Humble Oil & Refining Co. cored sand at 3,840-43 feet in No. 1 Mandelstam, Roberts Survey.

In Camp County, J. C. Rogers was drilling in sandy shale at 1,215 feet, in No. 1 J. C. Boyd, Montgomery Survey.

In Falls County, Groesbeck & Chisholm were drilling in lime at 2,540 feet in No. 1 Marlin National Bank, Smith Survey.

In Henderson County, Heine & Smith and others' No. 1 Fannie Cox, Brown Survey, Block 28, were drilling in shale at 1,650 feet.

In Limestone County, C. F. Lytle's No. 1 Thompson, Varella Survey, was drilling at 3,006 feet; Reiter, Lewis and others' No. 1 Mrs. Ward, Varella Survey, was drilling in chalk at 2,117 feet.

In Navarro County, O'Byrne and others' No. 1 Hamilton, Rahm Survey, was drilling in chalk at 2,670 feet.

In Smith County, the Humble Oil & Refining Co.'s No. 1 Williams, Keller Survey, was drilling in shale at 1,222 feet, and the Gulf Production Co. was drilling sticky shale at 2,150 feet in No. 2 McCammond, Moore Survey.

LINE FROM BLUE RIDGE

HOUSTON, Tex., May 12. — Sinclair Pipe Line Co. has started construction of a 4-inch line from the Blue Ridge Field, Fort Bend County, to its main line from Damon Mound, Brazoria County, to Houston. The Blue Ridge is 1½ miles north of the main line.

TEST IN MARSHALL CO., TENN.

CORNERSVILLE, Tenn., May 12.—W. H. Moores, manager of the Moores Oil Co., announces that his company has leased 6,000 acres on Richland and Tory Fork Creeks in Marshall County, and in the next few days.
it will start a test well on the property

Slightly tangled! —BUT NO BREAKS,

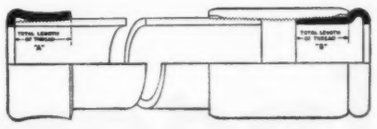
and— it reached the sand!

THIS picture tells its own story—printed words could not describe any better the quality built into this string of "NATIONAL" A. P. I. Seamless Interior Upset Drill Pipe. Scattered across the landscape in every conceivable shape, each length is a testimony to the ability of this pipe to meet both usual and unusual conditions in drilling for oil or gas. Two features of this blowout should interest every operator: first, it reached the sand—that was the important job; second, although twisted and tangled like a wire rope, there was not a single break in the entire string.

This is the kind of quality and performance that has made "NATIONAL" the recognized standard of the oil and gas industries.

National Tube Company manufactures all sizes and classes of A. P. I. Drill Pipe, Casing, Tubing and Line Pipe. "NATIONAL" Seamless Couplings are also available in all sizes and types for any oil country purpose.

An important feature of "NATIONAL" Service, and at no additional cost to the consumer, is the use of special thread protectors, illustrated below, consisting of a ring which screws over the threaded end of the pipe and a nipple screwed into the coupling end. Both ring and nipple are taper threaded to fit all sizes so that protection is given total length of threads as well as end of pipe and coupling.



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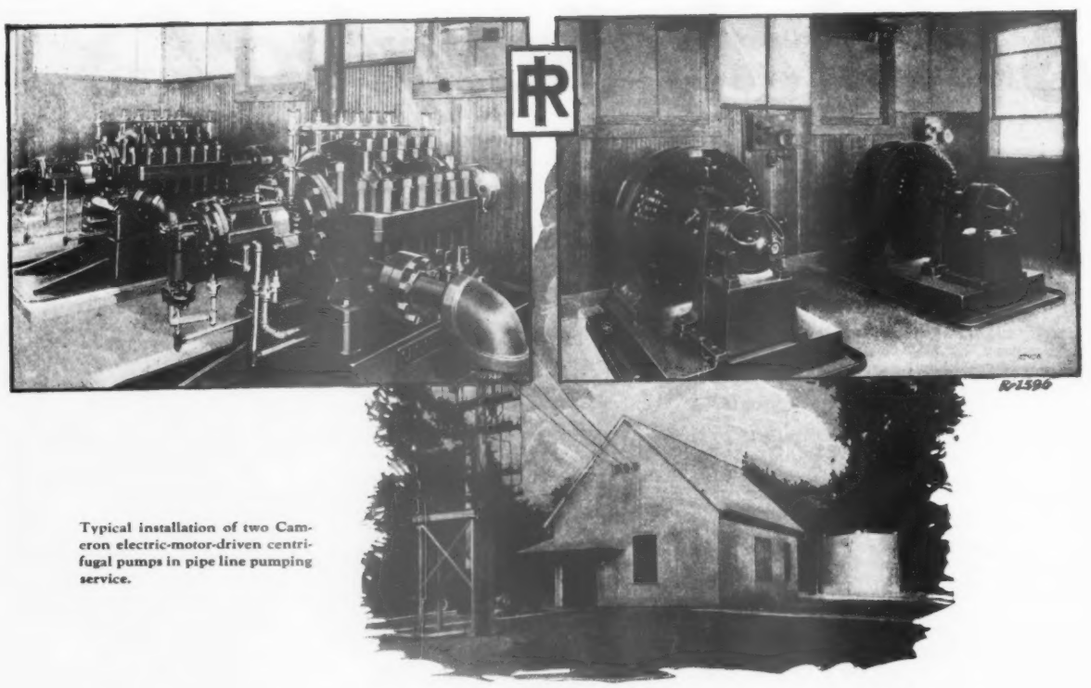

Typical installation of two Cameron electric-motor-driven centrifugal pumps in pipe line pumping service.

A complete centrifugal pump unit for pipe line operation

A SMALL building houses the entire plant — two Cameron electric-motor-driven Centrifugal Pumps, one of which handles the full load while the other stands by as a reserve unit.

As large storage tanks are unnecessary in this method of pipe line operation, a small tank is sufficient to provide for any emergency.

Such a pumping plant can be erected easily, the pumps installed, and placed in operation quickly.

Cameron centrifugal pipe line pumps cost less to install and to maintain, and show marked operating economies over most other types of pumping plant used for the same service.

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A. S. Cameron Steam Pump Works

INTERNATIONAL OIL CONFERENCE IS DISCUSSED AT WASHINGTON

By Charles E. Kern
Washington Bureau, The Oil and Gas Journal

WASHINGTON, D. C., May 12.—There is increasing discussion of an international conference composed of representatives of countries producing petroleum so that the oil industry of the world may proceed on business principles and to the advantage of nations that are in urgent need of capital and skill for the development of their petroleum resources. Experience has shown that countries that have adopted a business-like policy in the granting of concessions and in the regulation and taxation of oil companies have been conspicuous in the acquirement of wealth from their oil land. Quite as conspicuous in the opposite direction has been the failure to obtain development by countries that have hampered industry by arbitrary and unfair laws and have failed to provide security for those who invest their money and skill in the oil industry.

These countries have failed to recognize that a business transaction that does not insure equitable treatment to all parties concerned is sure to end disastrously. The idea that foreign capital will not be invested when reasonable rights are not assured seems to have been overlooked by many nations, some of which are now coming back to more business-like methods.

President Gomez of Venezuela, one of the intelligent and broad-minded executives of South America, took a position of leadership in establishing business-like dealings with foreign companies that were prepared to develop the oil deposits of his country. He recognized the fact that the petroleum wealth of Venezuela could only be exploited with the use of vast capital and skill by men ready to accept the hazards of the industry and that any permanent prosperity for the oil men and his country could be based only on sound business principles.

Example of Venezuela

It was this spirit that has dominated the political control of oil concessions and the regulation and taxation of oil companies which has had much to do in placing Venezuela in a foremost position in South America in respect to oil development. There has been and is today as great or greater security in that country for foreign capital than exists anywhere in the world with the possible exception of the United States. This good reputation has resulted in confidence on the part of the companies interested in oil development so that today more is known about the potential oil wealth of Venezuela than any other country of South America.

When Venezuela started to develop its oil resources there were causes for friction over the interpretation of the law relating to such concessions. The lack of accurate maps was one of the difficulties encountered in fixing the boundaries of concessions that had been granted and some areas were in effect confiscated from one concessionaire and given to another. Naturally there was much dissatisfaction and for a time, some six or seven years ago, foreign capital did not find Venezuela attractive for investment. It then became evident that something had to be done if the country was to have a prosperous and continuous oil industry.

The proceeding adopted by President Gomez would be highly appropriate for copying by any international conference that might be called by nations interested in the development of their oil reserves. He called into conference political leaders and men experienced in the oil industry and they finally drew up a set of principles which was later embodied in a law to establish the rights of the concessionaire and to determine methods and rates of taxation that could be understood and complied with by business men. While taking the hazards naturally accompanying the discovery and exploitation of oil they were given the maximum security respecting their rights to establish and pursue their industry.

The experiences of the Mexican oil industry should be an excellent example of what a country should not do, and should prove that any form of confiscation is bound to injure the country attempting to enforce it.

Colombia's Difficulties

At the present time Colombia is laboring under temptations to repeat the experiences of Mexico, but it is believed that it will recognize the lack of wisdom in adopting any form of confiscation. The Supreme Court of Colombia in 1921 confirmed to the owners of the surface, previous to the code of 1873, the ownership of rights in the subsoil and foreign oil companies, including some American companies, giving confidence to this decision, acquired oil rights from such owners. These foreign companies invested their capital in oil developments only to discover a law called the Petroleum Emergency Law passed in 1927 took the subsoil rights from the land owners and gave them to the government. That is one of the obstructions to development that must be removed by the Colombian government if confidence is to be re-established and foreign capital induced to continue to go to that country.

In the Argentine, the government has gone so far into the oil business and has so restricted opportunities for foreign companies that there is comparatively little oil development and the Argentine supplies only 15 per cent of the products of petroleum needed for domestic purposes.

Case of Brazil

Perhaps the most striking example of the inability of politicians, unacquainted with the subject of their legislation, to deal with oil industry, is found in the case of Brazil. The bill to govern Brazilian petroleum deposits, now pending, is expected to be acted upon in the month of May. Brazil never has given any visible demonstration of having petroleum deposits in important quantities and when the president of that country was approached by the representative of a foreign oil company, in respect to concessionaire rights, he took on a look of astonishment and asked: "Is there any oil in Brazil?"

Now the Chamber of Deputies of Brazil has before it a proposed petroleum law that stands as a menace to any adventurous person inclined to invest capital under a foreign jurisdiction. This law is filled with some of the most offensive provisions that it is possible to enact. In numerous instances it places the interpretation of the law in the hands of some government official. The oil man under this law would find that the whim of a government official would determine his rights.

One of the provisions of this proposed law declares that the concessionaire shall be bound to employ in his exploiting operations natives of Brazil whether this employment is to be technical, administrative or operative and that such employment of natives shall be "in proportion to be determined upon each case by the government."

Instead of stipulating conditions under which concessions shall not be transferred this proposed law makes them absolutely nontransferable except "by express permission from the ministry of agriculture, industry and commerce." The owners of pipe lines and refineries are obligated to transport and refine products other than their own. In the case of the pipe line they must "transport the oil of neighboring concessionaires in need of such transportation." Refiners shall be obligated to refine the oil of others "provided their capacity is larger than the yield of their own fields." In both cases the government shall fix the rates which shall be

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High Carbon Chain
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Sizes from ¼ to 40 tons, and a line of Roller-Bearing Trolleys

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This is another of a series on specifications—keep for reference in ordering.

Hydraulic Stop Cock

—Unbreakable parts —No replacements

This is the "stop cock" that the oil field has long wanted. It has a longer life—requires no replacement of parts and can be kept in service longer than other types of plug valves. Ordinary valves or stop cocks seldom last thruout one installation—while in comparison and on actual service test BARSCO stop cocks have been put in use and reused on up to six well installation and are still in steady service at this writing.

Here are a few important BARSCO features:

(1)—Adapted for steam, water, gas, oil or air and *especially for Rotary Slush Pumps.*

(2)—Made in sizes of 1¼", 1½", 2", 2½", 3" and 4".

(3)—No grease to collect dirt, form scale and cause sticking.

(4)—Specially designed packing in both ends.

(5)—Fifteen (15) ton lift on core, 14" wrench, positive operation—no hammering.

(6)—One quarter turn of wrench to open and close.

(7)—Core (or plug) can't break or stick.

(8)—Made of special "BARSCO" steel—indestructible.

(9)—Pressure—2000 lbs., safety factor to meet all requirements.

(10)—Can be packed under pressure, open or closed.

(11)—Original installation only—no removal for upkeep.

(12)—First cost is your only cost. Unbreakable parts—no replacements.

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paid for these services. The government itself is to have the same privileges if it should produce oil.

Drastic Provisions

Upon the expiration of 15 years, or at any time thereafter, the government may expropriate oil fields, refineries, transportation and storage facilities, the amount of indemnity payable to be decided by an umpire. Fifteen years will be considered a very brief period for the enjoyment of an oil lease, which may only become a value in that time. It would act as a positive prohibition against the construction of pipe line, refineries, and storage facilities as the end of that brief period would approach.

The truth is this proposed Brazilian petroleum law gives evidence of having been prepared by amateurs who were without any proper understanding of the conditions in the oil industry or the necessity for stability of rights once established.

An international conference of the representatives of oil-producing countries should have the assistance of experts from the oil industry of the several countries participating. They would be able to eliminate various crude conditions relating to concessions and the treatment of oil companies that are conspicuous in the proposed Brazilian petroleum law. Such a conference would be a vast service, even if most of the countries participating should refuse to abide by recommendations that might be formulated for the treatment of the industry. It would at least place on record the various suggestions that would naturally be made. It would really do what President Gomez did when he first considered formulating a petroleum law for Venezuela. He gathered from all parts of the world, and from all kinds of oil men, all the information they could offer to throw light on the legislative problems before him.

As this conference primarily would be for the benefit of countries desiring development of their oil wealth it should be initiated by individuals of those countries and, as South America is one of the great sources of petroleum, the conference might well result from a suggestion from that part of the world. It is well known that Spanish America has many men of lofty ideals and of sound business judgment, who might take on the role of leadership in this respect.

Technical and Economic

The discussions of this international conference should relate to the technical and economic phases of oil development rather than its political aspects. At the same time the fact that political power will be dominant in giving vitality to any code of business ethics that may be approved, cannot be overlooked. However, the conference could be kept strictly on commercial and technical lines of effort which later could be made the basis for political discussion.

The International Coal Conference held at the instance of the Carnegie Institute under the direction of President Baker tends to pave the way for a conference on oil as such methods now seem to be established as a permanent policy. Coal touches the interests of England, the United States, Germany and France but coal has not reached the importance of being international or political, although it is a highly interesting question to each of those countries. In the case of coal one or two conferences have been held and there has been no difficulty in eliminating the political factor and in confining the subject strictly to technical and economic matters.

Such an organization as the American Society of Petroleum Geologists might be of great assistance in promoting an international petroleum conference in conjunction with similar societies in other countries. No more constructive work could be undertaken than that involved in the working out of plans for such a conference.

Constructive Proposal

An international conference of oil-producing countries would be a success even though only a minority of such countries sent representatives to attend it. Its work would be constructive throughout the world. It would not only benefit oil-producing countries that are recognized as such today, but it would establish standards that would be available in countries not yet known to contain oil deposits, some of which are sure to develop oil.

If South American countries could be made to see that the oil industry of a nation prospers according to the fair opportunity given men who are willing to develop it they would not be slow to avail themselves of such a chance to promote their national wealth, as would result from an international conference to develop the most approved methods for handling oil problems.

It is a curious fact that no country in the world has been able to fully ascertain its potential oil-producing ability until years after the exploration and exploitation of its oil land has begun. The geologists can ascertain very little until actual development has laid the foundation to the knowledge necessary to ascertain the quantity of potential oil reserve. Every great oil-producing country today has been given surprises concerning its potential productive power after years of exploitation.

The vast wildernesses that exist in South American countries make especially necessary the adoption of satisfactory laws to invite oil companies there. If inaccessible regions are to be explored there must be assurance of profit if the venture proves a success. The international conference is suggested as the most thorough method that can be adopted to bring about the best understanding in the relations between government and oil companies for the development of national wealth and to reduce the hazard which faces capital invested in petroleum under any circumstances.

OIL PRODUCTION IN COLOMBIA AND PERU

Production of International Petroleum Co., Ltd., in Colombia during February totaled 1,595,000 bbls., an average of 55,000 bbls. daily. This compared with a total of 1,705,000 bbls., or 55,000 bbls. daily, in January, and a total in February, 1927, of 910,000 bbls., average 32,500 bbls. daily.

Shipments of crude from Cartagena in February were 1,230,471 bbls., compared with 1,226,473 bbls. in January and 930,000 bbls. in February, 1927. Of February shipments 1,013,687 bbls. or 82 per cent came to the United States, balance being destined to Belgium, British Columbia and England. In January 94 per cent of Colombian oil shipments came to the United States.

International produced 609,000 bbls. of crude in Peru in February, an average of 21,000 bbls. daily, compared with 713,000 bbls., or 23,000 bbls. daily, in January, and 700,000 bbls., or 25,000 bbls. daily, in February, 1928.

HIGH POWER LINE

The Humble Pipe Line Co. has concluded a contract with the Arkansas Harbor Terminal Railway for a right of way along its tracks from Arkansas Pass to Harbor Island for construction of an electric high line to serve its harbor plan project. The power plant is to be constructed in the vicinity of Ingleside.

GAS IN EAST AFRICA

Drilling at Inhaminga, 100 miles north of Beira on the Trans-Zambesia Railway in Portuguese, East Africa, is causing excitement as a result of the striking of gas at 1,325 feet, which is nearer the surface than the experts expected. Since the flow of gas penetrated 1,300 feet of mud, it is thought considerable pressure must exist.

GERMAN PRODUCTION GAINS

German crude oil production in 1927 estimated at more than 200,000 tons (1,400,000 bbls.), against 79,000 tons (553,000 bbls.) in 1913.

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This Barnsdall service gives you a real "extra-profit-edge"—a very important consideration for this year. 3-compartment tank cars make possible a one time delivery of up to 3 grades of oil or oil and gasoline. You make these savings — (1) lowest costs — (2) lowest transportation costs — (3) lowest handling costs—(4) the ability to keep your storage up to full capacity. *Write for specifications and prices.*

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—the "biggest" business and profit builder! An exclusive Barnsdall motor fuel—was the outstanding "hit" of last year. It is ANTI-KNOCK and scientifically produced for the present high speed, high compression motors. It is a PURE petroleum product. PEPPY POWER—carbonless—red in color and always uniform. Motorists like it—stations want it because it builds business. EXCLUSIVE SALE—under a Barnsdall permit and coupled with a new and unique sales help plan that will not only increase your motor fuel business—but create a rapid turnover on all "lub" oils. Write for the SUPER-GAS contract for 1928.

—from the oil well to the jobber—

,,,If you Really Want to Reduce Costs,,,

here is

A Guaranteed Way to Do It

Let us look at this proposition fairly and open-mindedly. Here is an improvement which in actual service of companies you know has outlasted three, five and up to thirty-six balls and seats. It has saved $500 a year for a single company whose name we will give on request; served three years in a well that once required change every month. No producer has yet ordered who did not re-order.

In addition to this, the No-Co-Ro Drop & Seat is covered by a definite and clearly worded guarantee—a 50% reduction in pulling costs or money back.

With such a saving guaranteed and a 70% to 90% saving possible, is it good business to delay a trial?

ORDER FROM ROBINSON OR DIRECT FROM FORT WORTH WAREHOUSE.

NORRIS BROTHERS, Inc.

Robinson, Illinois Fort Worth, Texas

ELECTRO-MAGNETIC EQUIPMENT HANDLES AIR-LIFT PRODUCTION

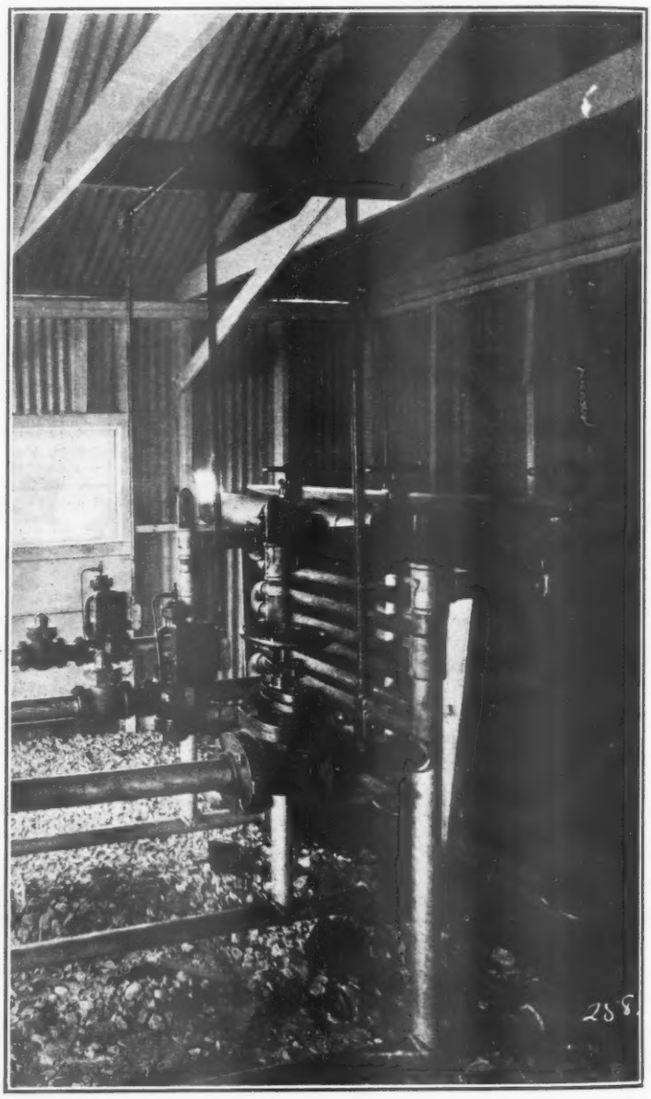
By J. L. Dwyer

The Greater Seminole oil field in central Oklahoma is the largest light oil field known to the petroleum industry. It has presented many interesting novelties in mode of operation, and caused a complete revision of many former methods. Probably the most notable feature of the field is the universal use of the air-gas system of producing oil, for at Seminole we found the first field which had this method introduced from the very start of production. The air lift has created a great change in the picture which flush oil fields present, and while the final conclusions of its efficacy are yet to be determined, there are unquestionably two conclusions which may be stated: It produces the oil more rapidly, and more economically than the former methods of production. Whether or not this system will result in a greater recovery per acre is a question for the future, and convincing answers to this question may not be available for years.

At this period of the productive life of the air lift in wells in the Seminole Field, there enter many serious problems due to the decline in the daily output of the wells. While the general principles of the system are common knowledge, a brief resume of their workings may not be amiss. When the wells have stopped their flow, or the flow dropped to a point where the owner may feel that more production could be obtained by air lift, tubing of various size and construction is run into the well. Compressors take either air or gas as the case may be, and apply it at predetermined pressures and volumes to the column of oil which stands in the hole. The air lifts the oil and carries it to the casinghead.

Troubles When Output Declines

This method is comparatively simple when wells of large daily output are considered, the degree of success in the operation depending principally upon the engineering skill employed by the producer. When the output drops, and the well is down to a production of 50 bbls. per day or less, there are numerous problems which must be solved. Probably the greatest trouble is the matter of compressor capacity, for although the well may be producing only a fraction of the oil it formerly made, the same number of compressors must be maintained in order to supply an adequate amount and pressure of the lifting agent to the column of oil. This problem has been chiefly responsible for the multiplicity of automatic and mechanical contrivances which have appeared for use in conjunction with the air-gas lift system of oil production, and while there have been numerous appliances such as automatic



Corner of a control house at Seminole. Two Jat automatic control valves are seen on the two lines on the left.

p-824-XL

Two 125-Horsepower "Gaspowered" Units on No. 1 Sugar Land Discovery Well

Waukesha and a Spanish Queen

Queen Isabella, in 1492, furnished the power behind the discovery of America. Waukesha, in 1928, furnished the power behind the discovery of oil in the Dewalt area in Texas. This latest discovery is only one of many pioneering enterprises powered by Waukesha Ricardo Head Engines. The location of the well in a heavily wooded river bottom made portability a prime factor in the selection of the power equipment. Only Waukesha natural gas-burning units can meet the severe demands of "wild catting"—Portability, dependability and reserve power.

Waukesha portable power plants are built in sizes ranging from 25 to 125 horsepower. Equipped with "Gaspower," these economical Ricardo Head Engines have won acceptance as the standard of performance for all oil field operations. Write for bulletins 609 and 662.

P-838-XL

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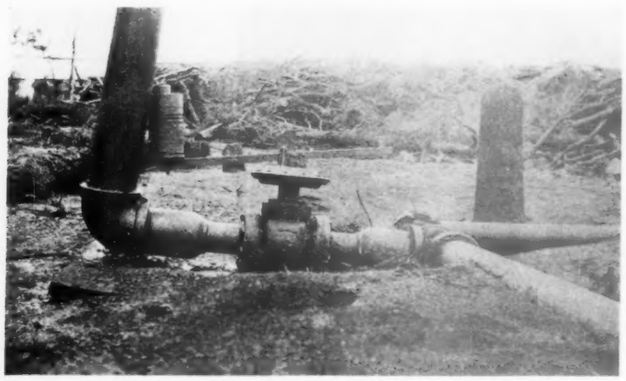
"... resumed normal operation after the flood"



A 4 inch Mason B.P. Casinghead Gas Regulator used as a relief valve on wet gas gathering system. Little River gasoline plant of the Forest E. Gilmore interests, Seminole district.

The installation shown above is in the bottom of a draw through which a spring freshet had just passed, sending several feet of mud and water over the equipment. The vertical vent pipe is out of line and mud may still be seen on the equipment, *which resumed normal operation after the flood.*

Mason Casinghead Gas Regulators give dependable service under the severest kind of conditions; there are no stuffing boxes to cause friction or leakage and the regulator will not surge or chatter. Made in sizes from 2 inches up, furnished with special trim to resist rust or corrosion and moderate in price. Write for descriptive literature or consult our nearest representative.

Mason No. 266 Casinghead Gas Regulator.

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Shreveport, La.

Warren & Bailey Company
Los Angeles, California

J. A. Rossiter Company
Houston, Texas

1950

kick-off valves, and intermittent flow controls, there is still much to be learned regarding this type of equipment.

It is interesting to note that the crookedness of the hole, the depth of the oil sand and the diameter of the casing have no bearing upon the efficacy of the air-gas method when all other factors and conditions are favorable to its use.

The Jat System

A method of operating the air-gas lift equipment which is reported to be making favorable progress in Seminole, is the Jat system of intermittent control. This method has gained much favorable comment principally on account of the flexibility of equipment which it permits, as well as the easy mobility which attends its use, and the economy of compressor capacity which it effects. There are no heavy or large parts necessitated in the use of the Jat system, and it operates on the electro-magnetic principle. The Jat system was known as the K. & G. system during the period of its development, and it constitutes a new method in production which effects a genuine economy in air lift operations, and has in a great number of cases resulted in an actual increase in the daily production of a lease.

Under this system the wells are intermittently flowed by the gas lift, the tubing of the wells alternately filling under the normal well pressure, and the oil being forced to the surface at intervals when the mechanism causes the introduction of the air or gas to the accumulation chamber at the bottom of the string of tubing. The equipment used in the

The gas distributor of the Jat system which supplies current which operates the electro-magnetic control valves.

system is composed of primarily, an automatic electrically operated gas distributor which is in common practice placed at the compressor plant, or else in the control room when these are employed in the operation of the lease. The function of this gas distributor is to regulate the opening and closing of automatic magnetically operated control valves, one of which is placed on each line or lateral running from the compressors to the individual wells which are operated as a part of the Jat system.

Distributing the Gas

The gas distributor (called Gastributor by the makers) is shown in the photo accompanying this story, and is a sensitive and accurate piece of mechanism yet of simple construction and design. With all its power connections it occupies only about 1 cubic foot of space. Power may be supplied from any convenient source as the consumption is said to be relatively small for operating the motor. This electric motor is of the same general type as that used in electrically operated Victrolas. It turns an indicator which is visible at the top of the distributor, and which reveals to the operator, which particular well is receiving the gas or air. The distributor is designed to handle any number of wells from 1 to 12, and each well has a numeral on the top of the distributor. This indicator was primarily intended to assist in timing the flow of the wells. In addition to the numerals on top of the indicator, many companies add a series of electric bulbs, one at each numeral. This shows at a glance which well is connected, and also affords a better timing of the current.

Also Distributes Electric Current

The Gastributor distributes current to each of the automatic control valves which are also a part of the Jat system, and suitable adjustments are provided for timing each individual well in accordance with the well's most efficient manner of operation. Wires lead from each contact point in the Gastributor to each of the automatic control valves, one wire being sufficient for each well. A glance at the Gastributor shown in the accompanying illustration will reveal that the device has a switchboard similar to that which may be seen in telegraph systems. The switchboard is composed of 12 strips of brass running horizontally, with 12 holes punched in each strip. On the other side of the Gastributor, there are 12 strips of brass running vertically, each with 12 holes punched in them. These two systems of brass strips form the circuits which may be connected at will in any number of combinations and periods of timing. The contact points represented in the strips may be grouped when desired for wells requiring unusually long periods of gas application.

Automatic Control Valves

The Jat automatic control valves are pressure operated. An auxiliary or pilot valve admits and exhausts the operating pressure for the control valves. The valves open and close instantaneously, there is no gradual introduction of the gas. The current is applied to the pilot valve, it in turn introduces the pressure which immediately throws open the main valve and admits the full charge of the air or gas into the tubing or casing which may be used; and when the proper time period has elapsed, the reverse action is taken, the current is cut off from the pilot valve, the operating pressure is taken from the main valve, and a strong spring in the bottom of the main valve causes the circuit to be closed against the admission of any further air or gas. The well is then in the accumulation period once more.

The Jat automatic control valves shown in the picture are of the electro-magnetic type. The electric current from the Gastributor is applied at the desired interval to the side of the automatic control valve. It enters a circuit which throws the pilot valve, which in turn allows the electro-magnetic system to operate against a piston which is located in the top of the valve. The piston works against a valve in the main part of the system, and the valve is held in the closed position by a spring in the very bottom of the apparatus. The pressure is applied against the spring, and the main valve is forced open, allowing the full volume and pressure of the air or gas to be immediately introduced into the well.

Handle 1 to 12 Wells

The Gastributors were designed to handle from 1 to 12 wells, but the actual number of wells which may be operated from one Gastributor is governed by the time required for the tubing to fill with oil; and also the time necessary for the well to be purged of the oil which has accumulated. This naturally requires that rather complete study of the tendencies of each well be available in order to fully determine the conditions which make for the most efficient operations of the wells. In using the Jat system, only one well is flowed at a time. If a certain oil well should require 15 minutes to fill and 3 minutes to empty, the total cycle of operating would be 18 minutes. Other wells having a total operating cycle similar or less than the 18-minute well may be placed in the same circuit. For instance, three other wells having a cycle of six minutes could be placed in the station with the 18-minute well.

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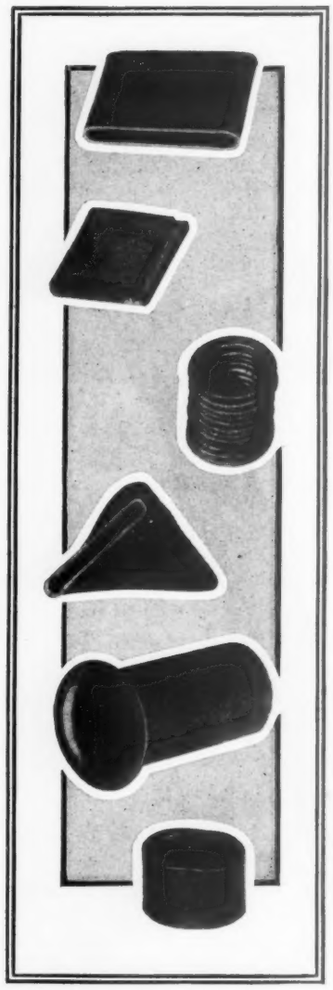

1 Here, a three-inch, 12 gauge ARMCO Ingot Iron tube was flattened by hydraulic pressure while cold. Observe the sound, dense structure of the iron which has not checked, nor distorted appreciably.

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3 A two-inch, 13 gauge ARMCO Ingot Iron tube, crushed longitudinally. Of all the various tests shown, this is undoubtedly the most strenuous.

4 The two ends flattened at right angles to each other, this three-inch, 12 gauge ARMCO Ingot Iron tube shows little or no evidence of the severe strain to which it was subjected.

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was having extreme difficulty. The plant had eight wells to handle, and was by constant operation barely able to keep sufficient gas compressed to supply the wells. When any one of the compressors became idle through repairs or other trouble the daily production of the lease took a sharp decline. Occasional shutdowns deemed advisable for all machinery were rendered impossible in this plant. The owners installed Jat systems and now report that through the flexibility of operation they may shut down one or two compressors at a time without any damage to the output of the lease.

CALIFORNIA DECLINE LAST HALF OF 1928

(Continued from Page 66)

then stopped, and a slow decline inaugurated near the middle of the year.

Other Fields

Deeper drilling at Rincon and at Seal Beach seems to furnish the only possibility of other material increases at this time. Rincon can never be a major field, but it seems probable that deeper drilling will improve production at this locality, and may even furnish a number of fairly large wells. Operators at Rincon have been playing with upper sands carrying much water and a little oil. Deep drilling should uncover more commercial yields, but such are not expected to upset the state totals materially.

There is a very deep undeveloped oil zone in the Alamitos Heights extension of Seal Beach, and also thick oil zones in the main field which are being held in reserve. There is little drilling in these areas, however, and completions will be slow.

The new Potrero oil field in Los Angeles Basin is closely controlled by one company, and presents difficult engineering problems. It will be one of the smallest pools opened along the Newport-Beverly sheer zone, and is a negligible factor in California production.

Ventura Avenue is being developed slowly, and many wells having a high gas-oil ratio have been shut in. Production there will do well to hold level during the balance of the year. Many other fields of the State will decline slowly, and will thereby contribute toward the expected downward curve in California during the last half of 1928.

It is possible, of course, that someone will drop a match into the deep sand reserves of some major field. Inglewood, Dominguez and Seal Beach all have deep possibilities which are being held in abeyance. Deep drilling in these fields could skyrocket California production. The areas are nearly all held by responsible operators, however, and the danger thus reduced to a minimum.

San Joaquin Basin, which is the future treasure house of California, will not contribute any large amount of new production during the balance of the year, but its tremendous potentialities should not be forgotten. It is essentially an area of vast acreages being slowly developed. The Gulf interests have lately opened an important new field at Fruitvale, and perhaps another at Union Avenue, but these and other new discoveries cannot stage any big action until 1929.

Faith and Capital

I believe that better times for the oil industry are just ahead; in fact, that these have already started. The industry needs two things—faith and new capital. If it can supply the first of these ,it can secure the second. New development of a scientific nature has reached a minimum except in a few flush fields. Long-lived oil properties of recognized proven or prospective value are going begging. Old equipment has been made to serve beyond its time, and new equipment to replace this will be purchased at the first general rise in the price of crude. The industry seems about to enter a more prosperous cycle for producer, manufacturer, and marketer.

Many a successful business is the result of the ability of its leaders to realize when the tide has turned. I know farsighted operators in California who are now acquiring proven long-lived acreage almost on their own terms, which acreage can hardly fail to net them millions of dollars on a return to normal. These opportunities had been passed up for years by operators who have not discounted present conditions. The outlook for various departments of the oil industry would seem to warrant faith and new capital.

Summary

California has been greatly benefited by the recent shutting in of 52,000 additional barrels of oil (11,000 bbls. of light in March and 41,000 bbls. of heavy in April) which brings the total amount shut in to approximately 120,000 bbls. daily.

The peak of production in California for the year 1928 is near. It will perhaps correspond with the peak at Long Beach, and be reached in or about June. State production is expected then to decline slowly, and may possibly fall below 600,000 bbls. by winter, provided no curtailed production is opened up.

Crude stocks in California are being drawn upon, and the temporary increase in production over the next few weeks may therefore be discounted. With a long decline in production then indicated to start with the season of maximum consumption, conditions in California appear more favorable than at any other time during the past year and a half.

GEOLOGIC FACTORS IN WATER FLOODING

(Continued from Page 66)

sition of alternating beds of sand and shale and finally there was a general submersion during which time the calcareous cap rock was formed.

At a time somewhat after the deposition of the Bradford sand, the waters had advanced north and east into what is now Allegany County, where in estuaries and lagoons and during times of sudden marine invasion the Richburg group of sands were deposited. During the eons of succeeding years these sands were covered by younger deposits and were compacted and folded to form the reservoir rocks of our present day oil fields.

The origin of the oil sands of this region is possibly of little significance to the practical operator, but in a larger sense the conditions under which they were formed is of great importance, since their character has been responsible for the successful application of water flooding in this region. The fact that the sediments originated so far away and were carried by streams of very low gradient resulted in the deposition of fine-grained sands, and as it will be later shown, fine-grained sands are essential for successful flooding operations.

Geologic Factors Influencing Recovery by Flooding

1. Effects of Configurations in the Top and Bottom of the Oil Sands on the Rate and Direction of Flood Movement:

A. Major Structural Features:

Both in the Bradford and Allegany fields the major structural dip is ordinarily so low that it has very little effect upon flood movement. However, in certain parts of the Bradford Field, especially in the eastern and southwestern parts, the dip is sufficient to materially effect flooding action, and in these localities and in experimental floods in other fields it will be most advantageous to carefully consider the sand drip in planning a flood. Where dips occur of over 1 degree, there is no question but that flooding up dip is the logical procedure. Flooding down dip is contrary to the natural association of oil and water and it almost always requires the handling of large volumes of water. In addition, there is good evidence that floods moving down dip by-pass much oil and consequently give poorer recovery than floods moving in the opposite direction.

B. The Strike Theory:

L. S. Panyity[1] has observed that in certain areas of the Bradford Field the flood tends to move fastest in the direction of the structural strike of the sand. There is good evidence in support of this

[1] L. S. Panyity, "A Study of the Flooding Process Used in the Bradford Area," Oil Trade Journal, May, 1925.

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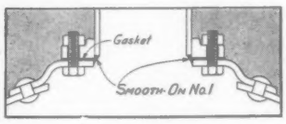

Instead he made a bent diamond point tool, got inside the drums, which were 4 ft. in diameter, scraped a clean V-groove at the inside edges of the joint, and packed these grooves with a putty of Smooth-On No. 1. In every instance, the leakage stopped completely and permanently.

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theory, especially in areas of relatively flat sand. It is believed that the strike of the main structure of the Bradford Field parallels old lines of sedimentation and it is therefore much easier for the flood water to move in the direction of sedimentary trends than across them.

Sand Thickness

C. Irregularities in Sand Thickness: The basement upon which the oil sands of this area were deposited was by no means a plane, and, owing to the action of the waves and to ocean currents, the tops of the sands are frequently irregular. It is really surprising what variations in thickness may occur in even restricted areas, and as a matter of fact, careful observations of sand cuttings frequently show that the irregularities are much more pronounced than is ordinarily surmised. The effect of these features on flood movement has been adequately described in a previous paper[2] and it does not seem necessary to describe them in detail again. Gravitational separation of oil and water in the sand occurs in a similar way to the association of oil and water in an anticline. Where the sand possesses a fairly homogeneous lithology and oil saturation, the wells located on the high spots of the sand are almost invariably the best producers, while wells located on low spots give very poor results. Where irregularities occur in the bottom of the sand it is most advisable to flood from thin to thick sand, and assuming a fairly uniform saturation, this principle should hold good under almost any condition. It is a well-known fact that the oil sands of this region do not thin out as a smooth wall, but rather they break up into lenses and tongues which may never extend to adjacent wells even under the close spacing conditions that are used in ordinary flooding practice. There is obviously more oil present in a thick part of the sand than in a thin part, and it therefore seems unreasonable to attempt to push oil away from a place where it can easily be recovered toward a thinner part of the sand where it may be effectively trapped by shale breaks or lensing out of the sand body. It is, of course, under certain conditions, infeasible to change flooding plans to conform to sand conditions, but it has been observed that the operators of some of the most successful floods in the Bradford Field have disregarded any fixed spacing pattern and have located their wells to take advantage of variations in the lithologic character and thickness of the sand body.

Porosity

2. Effect of Variation in the Porosity and Permeability of the Reservoir Rock on Flood Recovery:

The porosity and permeability of sandstones is largely dependent upon various other factors such as size of grain and cementing material which will be discussed in following sections. In many respects these factors are so interrelated that it is almost impossible to analyze one without considering the others. Strictly speaking, an oil sand may possess a high porosity and a fairly low permeability if the size of sand grains is small. Water flooding, under extra pressure, is successful in sands possessing a porosity of 7 per cent, and it seems possible that a very homogeneous sand of 5 per cent porosity might be economically flooded. Sands of such low porosity very likely retain a much greater percentage of their original oil content after a long period of natural production than sands of considerably higher porosity. In consequence, the amount of recoverable oil is probably more nearly equal than might be expected. The upper porosity limit for the sands of the lower Chemung is probably about 22 per cent, but in the areas of highest porosity (which occur in the Richburg sand), the sand grains are so extremely fine that the permeability is relatively low compared to that of a conglomeratic sand of equal porosity. The average porosity of the Bradford sand is about 13 per cent. From the foregoing it would seem that the actual porosity of a sand, within certain limits, has a very slight effect upon flood movement and probably has less effect on flood recovery than has been previously believed.

Permeability

The permeability of oil sands depends upon the percentage and size of the pore spaces, and in so far as flooding is strictly concerned, upon the contents of the pore spaces. It has been found that barren sands, overlying the main oil pay, possessing a porosity of only 8 per cent will absorb practically all of the available water leaving none to move through the much higher porosity, oil-saturated part of the sand. A similar condition frequently occurs in the oil sand where one individual bed of high permeability will be rapidly watered out, leaving a large amount of unrecoverable oil in the sand. As the oil is removed, the permeability of the sand evidently increases, which is proven by the gradual increase of total fluid production during the entire life of a flood well.

Marked variations in permeability frequently offer very perplexing problems in flood development. Where the water travels too fast in the upper part, the sand can usually be packed off or plugged with cement or heavy oil, and if the same condition exists in the bottom parts of the sand, lead wool, cement or wooden plugs will ordinarily give relief. The greatest problem, and one which yet remains unsolved, is to devise methods for controlling the flow through highly permeable lenses that may occur near the middle of the sand. In order to be effective, any cementing material must penetrate beyond the area effected by the torpedo, and considering the average fine pore spaces of the sands of this area, the solution of the problem may be somewhat difficult. Experiments are being made at the present time in the hopes of perfecting a process for this purpose.

In many cases, if more defnite information had been available regarding the character of the sand, much money would have been saved. The value of sand cores for this purpose has been appreciated by only a few operators, but it is believed that more coring will be done in the future. On several properties it has been profitable to redrill the sand between the abandoned lines of water wells where there has been sufficient variations in permeability to allow for the trapping of oil in the less permeable parts. Sands possessing a fairly high porosity and a low permeability seem to be best adapted to water flooding.

Grain Size

3. Effect of Grain Size and Saturation of Oil Sands on Flood Movement and Flood Recovery:

The very fine-grained character of the oil-producing sands that are being successfully flooded in the Bradford and Allegany fields has been described in a preceding paragraph. Many attempts have been made to flood coarser grained sands such as the Second sand of the Bradford Field and the Chipmunk. In so far as the author knows, none of these floods have given satisfactory results. This condition is not in agreement with certain experimental studies that have been recently published, especially the work of Uren and Fahmy.[3]

Uren and Fahmy state that "water flooding is more effective in coarse-grained sands than in fine-grained sands." This conclusion is not confirmed by the results obtained in this region. In the area of the Richburg Pool, where flooding gives the highest recovery, from 80 to 90 per cent of the sand grains will pass through a 200-mesh screen. Comparable results have never been obtained in the slightly coarser grained Bradford sand, and poor results have been obtained from flooding experiments in conglomeratic sands. The reason for this should be almost self-evident. The coarser grained sands ordinarily possess larger sized interstices and are therefore more easily drained of their fluid by natural production; in contrast the less permeable, fine-grained sands offer a much greater resist-

[2] A.I.M.E., Technical Publication No. 39, pp. 7-12.

[3] L. C. Uren and E. H. Fahmy, "Factors Influencing the Recovery of Petroleum from Unconsolidated Sands by Water Flooding," A.I.M.E., New York meeting, February, 1928.

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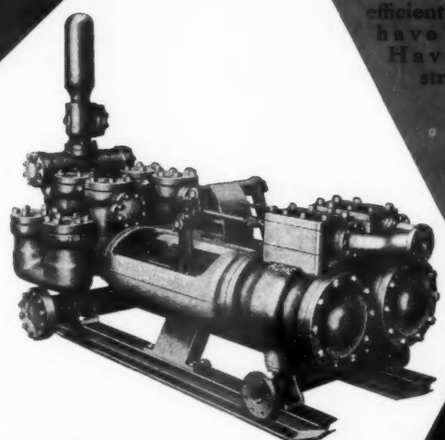

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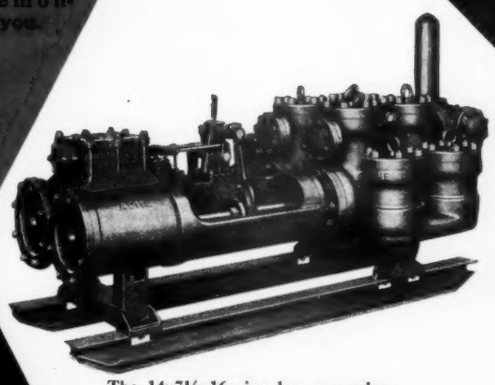

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ance to fluid movement, and therefore retain a greater percentage of their original saturation. Furthermore, fine-grained sands may be expected to possess a much larger area of grain surface than coarse-grained sands. Assuming that the sand grains are of equal size and are spherical and that they are arranged in cubical pattern, which, of course, is not exactly true, but for the purposes of discussion may be implied, the area of grain surface upon which an oil firm may be attached increases with a dimunition in the size of the sand grains, while the porosity is constant, no matter what the fixed diameter of the grains may be. The natural irregularity in the shape and the arrangement of grains and the presence of cementing materials reduces the maximum theoretical porosity and area of grain surface of sandstones, but it is believed that the general relationship between the area of grain surface and grain size is fairly constant under almost all conditions. Fine-grained sands, therefore, possess a distinct advantage over coarse-grained sands for flooding purposes, in that they more effectively resist depletion of their oil content by natural methods of production, owing to their lower permeability and their larger area of grain surface.

Laboratory and Field Work

It is somewhat surprising that there should be such a lack of agreement between laboratory work which appears to have been done with great care and thoroughness and actual field experience. This nonconformity of results may be attributed to the practically complete saturation of the sands in the experiments which would make available approximately equal volumes of oil in both coarse and fine-grained sands (which appears to be contradictory to natural conditions), and to the high porosity of the sands used. If Uren and Fahmy had drained their sands before they were flooded, it is believed that the results of their experiments would have more nearly approached the results obtained in the field. It is also possible that if an oil of lower viscosity, such as Bradford crude, had been used, the experimental results might have been somewhat different.

The saturation of the sand is a most important factor in determining the amount of oil that may be recovered by water flooding. It has been observed that recoveries are better from properties that were sparsely drilled under natural conditions of production than from properties possessing similar sand conditions upon which the wells were closely spaced. The average recovery of oil in good territory, in the Bradford Field, by natural production amounted to about 4,200 bbls. per acre with a spacing of one well to 4.5 acres. On properties where a wider spacing pattern was used the acre yield has been less although the individual well recovery has been somewhat higher, and consequently under uniform sand conditions there is much more oil left that is easily recoverable by the water flood.

Sand Cement

4. Effect of Sand Cement on Flood Recovery:

Uren and Fahmy[4] have discovered that the kind of cementing material or sand grain coating has a marked effect upon the recovery of oil by flooding. The results of their experiments have indicated that sand grains coated with silica are much better adapted for flooding purposes than those coated with lime or iron oxide. The sands of the Bradford and Allegany fields are almost uniformly cemented with siliceous and argillaceous material. There is very little calcareous or ferruginous cement present which may be a contributing factor to the success of water flooding in this region. It seems that the results of these mineral-coating experiments gives another very useful criterion for determining the adaptability of oil sands to water flooding.

Gravity and Pressure

5. Effect of Oil Gravity and Natural Rock Pressure on Flood Recovery:

Several authorities have agreed[5] that high gravity oil is better adapted to flooding than low gravity oil. This is a most logical conclusion, since low gravity oils will undoubtedly offer much greater resistance to flooding action than lighter oils. The gravity of oil from flood wells invariably increases up to the time of peak production. Frequently this increase amounts to over 2 A.P.I. degrees. It is believed that this change is due to the solution of rich natural gas which existed in bubbles in the pore spaces prior to the application of water pressure.

Natural rock pressure, above 5 or 10 pounds, is not especially helpful in effectively flooding an oil sand. In fact, even a small back pressure will seriously affect production. A light vacuum is used to very good advantage on certain properties in the Allegany fields. A high vacuum is not recommended since it seems to facilitate caving in the hole.

Conclusion

A complete discussion of the many other factors that influence the recovery of oil by flooding would be far beyond the scope of this paper. If possible, a study of geologic conditions should be made prior to or during the initial period of property development. Technologic difficulties can usually be corrected as they arise, but unfavorable conditions in the sand body can never be changed. It is hoped that the experience gained from past operations will assist in the future development of not only the fields in this region but in other localities where the conditions may be favorable for the application of the water flood.

Acknowledgments

The author is very grateful to Jerry B. Newby of the Petroleum Reclamation Co. for helpful suggestions and criticisms during the preparation of this paper.

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Since the publication of Doctor Umpleby's outstanding paper[6] there have been a number of valuable contributions regarding water flooding. Quite a few of these have been listed below including some of those given by Doctor Umpleby.

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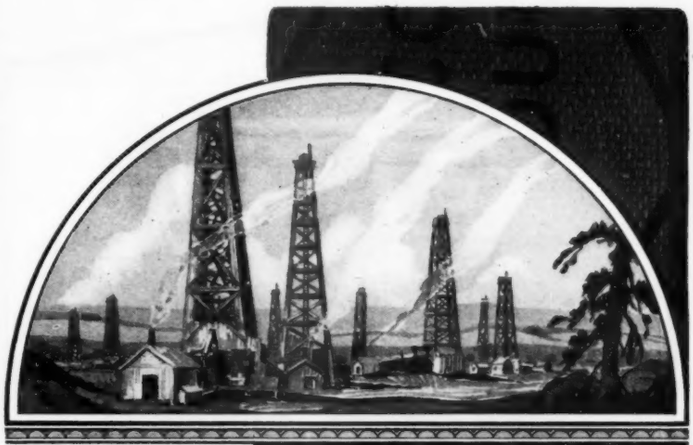

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GARCO Brake Lining is ideally suited to oil-field work. It easily withstands the most severe usage. It lasts longer than ordinary lining and gives long wear and utmost satisfaction.

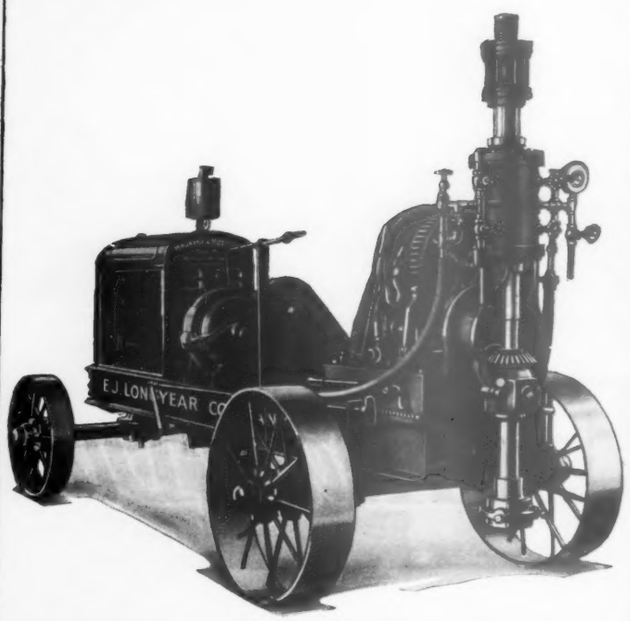
The fact that the use of GARCO is constantly increasing in the fields, sustains our claim that this is the *preferred* brake lining for oil service.

GARCO is recommended to those who seek freedom from brake lining troubles.

Write for Complete Information

GENERAL ASBESTOS & RUBBER COMPANY
North Charleston, S. C.

GARCO
BRAKE LINING
Folded & Molded



For Determining Oil Structures Economically

The Improved Longyear2N Gas Diamond Drill

The necessities of petroleum exploration require diamond drill equipment that is not only efficient in structure drilling, but that has a high degree of mobility as well. Changes in location must be easily made and laborious set-ups avoided. The structure data obtained from diamond drill cores are exact and are obtained more easily and economically than by other methods.

The Longyear 2N Gas Diamond Core Drill pictured above has the drill, engine and pump all mounted on a steel truck. This makes a complete diamond drill unit which has every advantage of mobility and economy of operation.

A Few 2N Features

MOTIVE POWER—Waukesha 4x5 gas engine with governor which increases power under load automatically.

DRILLING MACHINE—The Longyear 2N Drill which has given satisfactory service under a variety of difficult field conditions. It is equipped with hydraulic swivel head for controlling feed while rods are rotating.

CAPACITY—Will drill 1000 feet recovering 2 in. core, or 2000 feet recovering 1-1/8 in. core.

HOIST—Smoothness is obtained by using an internal geared hoist.

DRILL SHAFT BRAKE—A precaution against the accidental dropping of drill rods has been added in the form of a brake applied automatically with the release of clutch.

PUMP—A 6x4 pump with mud valves is used, powered by the engine. It is equipped with relief and by-pass valves which give perfect control over the water circulation. The pump may be operated independently of the drill.

SHAFT CONNECTION—A flexible coupling on the shaft relieves all bearings from undue wear in case of any variation in alignment between motor and drill.

For information relative to the improved 2N Longyear Gas Drill or any other type of diamond core drill and supplies, write either the Minneapolis office or branch warehouse at Ponca City, Oklahoma.

E. J. Longyear Company
Minneapolis, Minnesota, U.S.A.

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OH, THE TANK CAR LEADS A JOLLY LIFE

(Continued from Page 34)

of the car and by means of a rod extending up through the center of the tank opens the outlet valve. It is his business to see that the valve is working properly before any liquid is run into the tank.

In the case of a used car any dirty residue from the preceding load must be drained through the outlet leg before a fresh load is introduced. Sometimes it is necessary for a workman to descend into the tank through the manhole in the dome and give the interior of the car a thorough sweeping and general cleaning. So far as possible each tank is restricted to some one product, thus minimizing the necessity of cleaning and the likelihood of discoloring or otherwise injuring one product through mixture with another.

Then too the car must be gone over, inside and outside, to see if any repairs are needed. Gas masks must be worn by men entering tanks filled with hydrocarbon vapors. Serious consequences sometimes result from failure to observe this precaution. At other times the consequences are just short of being serious. There's the case of Ollie Williams of Bristow, Okla., for instance.

What Happened to Williams

Williams, now a car foreman, was a tank car repairman a few years ago when he went down into an empty gasoline tank one day to attend to some needed repairs. It happened that gas masks ordered by the management had not arrived, but Williams, who had not yet acquired the wholesome respect for gasoline fumes that he has now, lowered himself into the tank, not believing there was any danger. He had been in the tank a few minutes only when he suddenly went to sleep without the preliminary of undressing. A fellow workman who remained on top of the tank glanced down and saw Williams curled up at the bottom. He yelled for help and descended to the rescue.

If any person craves an adventure that will test his muscle, his ingenuity and his ability to resist poisonous gases, let him try boosting a fellow human being through an 18-inch manhole from the bottom of a gas-filled tank. In the case in point Williams, limp and completely unconscious, frustrated all his rescuer's struggles to get him sufficiently straightened out to go through the manhole. Just when it seemed as though he was about to be shoved up into daylight he would crumple and stick in the narrow exit. Fortunately for Williams and his rescuer, other workmen had heard the call for help and they reached the tank in time to pull both men to safety. A roaring headache was all that Williams suffered from his experience. He recovered his senses soon after he had been dragged into the open air. Gasoline vapors often have the effect of making their victim laugh foolishly, like a man who has acquired a "laughing jag." Williams didn't laugh. He was just boiling mad at himself and at the world in general.

Refineries ordinarily provide each loading spot along the rack with three pipes —one for "clean" products (gasoline, kerosene, naphtha); one for motor oils and one for "dirty" products (chiefly fuel oils.)

An extensible loading pipe on a swing hinge provides the rack man with a convenient device for filling the tank car. He drops the elbowed end of this loading pipe over the open dome and the product desired for that particular tank is pumped into it. The capacity of the dome usually is 2 per cent of the tank and the rack man stops the flow of inflammable oils as soon as they have filled the tank proper because of their extreme volatility and tendency to violent expansion. Crude and other nonvolatile oils are permitted to fill most of the dome, some allowance being made for expansion and contraction, however.

Extra Precaution Needed

While the heavier oils and straightrun gasoline are allowed to splash into the tank as crude goes into a flow tank, precautions are taken in the handling of casinghead gasoline on account of the readiness of its lighter fractions to vaporize when subjected to agitation. A special dome cover is provided with a pipe that extends almost to the bottom of the tank when it is set in position. The loading pipe is adjusted to this dome cover pipe with the result that the gasoline enters gently, without boiling or bubbling, as would be the case if it dropped in an unrestrained cascade. The tank dome is provided not only with a gas-tight loading pipe, but with an outlet pipe through which the gas which forms in the tank in spite of the scarcely preceptible agitation of the liquid and which otherwise would escape, is carried back to the compressors.

As soon as possible after it has been filled the tank car is switched from the loading rack and sent on its way. At this point lurk potentialities for trouble. The loading rack generally is established on an elevation with a view of procuring good drainage, with the result that a car moving from the rack goes down a grade, sometimes a sharp one, to reach the railroad's main tracks. Now and then a car gets beyond control on this grade and has a wild race till it hits the derail, where it plunges from the track, lurches over on its side, inflicting more or less damage in the meantime, and provides a job for the wreck crew.

The process of emptying the tank is a simple one if workmen observe the precautions enjoined upon them. The cap covering the outlet leg projecting from the bottom of the tank is removed, a 2-inch pipe is attached, the valve is opened by means of the rod extending up into the dome and the contents of the tank flow out by gravity.

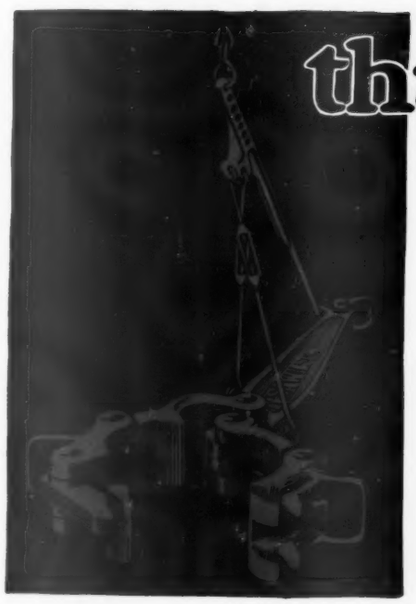
Slovenly Workman Gets His

But workmen sometimes have an unhappy way of ignoring directions or taking chances, in this case inviting various kinds of excitment, an oleaginous drenching and serious loss to the employer. Before removing the outlet cap it is the workman's duty to see that the outlet valve is working properly. After finding one valve after another functioning perfectly a workman now and then, if disposed to view his task as just another curse handed down from the Garden of Eden, will skip this part of his job as a needless strain upon his faculties.

For weeks—months, maybe—there is not an untoward circumstance to disturb the workman's conviction that the rule requiring testing of the outlet valve is merely one more instance of a boss' pen-

WILSON TONGS GUARANTEE *SAFETY !!*

The One latch that *never* unlatches accidentally



The Wilson Tong will never fly off the pipe or casing if the cat-line should break, because the spring-latch on a Wilson Tong will not unlatch. The latch is at the end of the jaws, in front of the tong, where the pull is squarely against the tee-head—so no strain occurs. The 4 jaws are actuated by the lever which has a double compensating fulcrum, equalizing the distribution of pull around the casing.

Only Wilson Tongs can embody *all* essentials of safety, speed, strength and convenience, because Wilson invented and patented the features which render these necessary essentials possible.

Carried in stock by your Supply Companies.

Wilson Oil Tools Corp.
DISTRIBUTORS FOR
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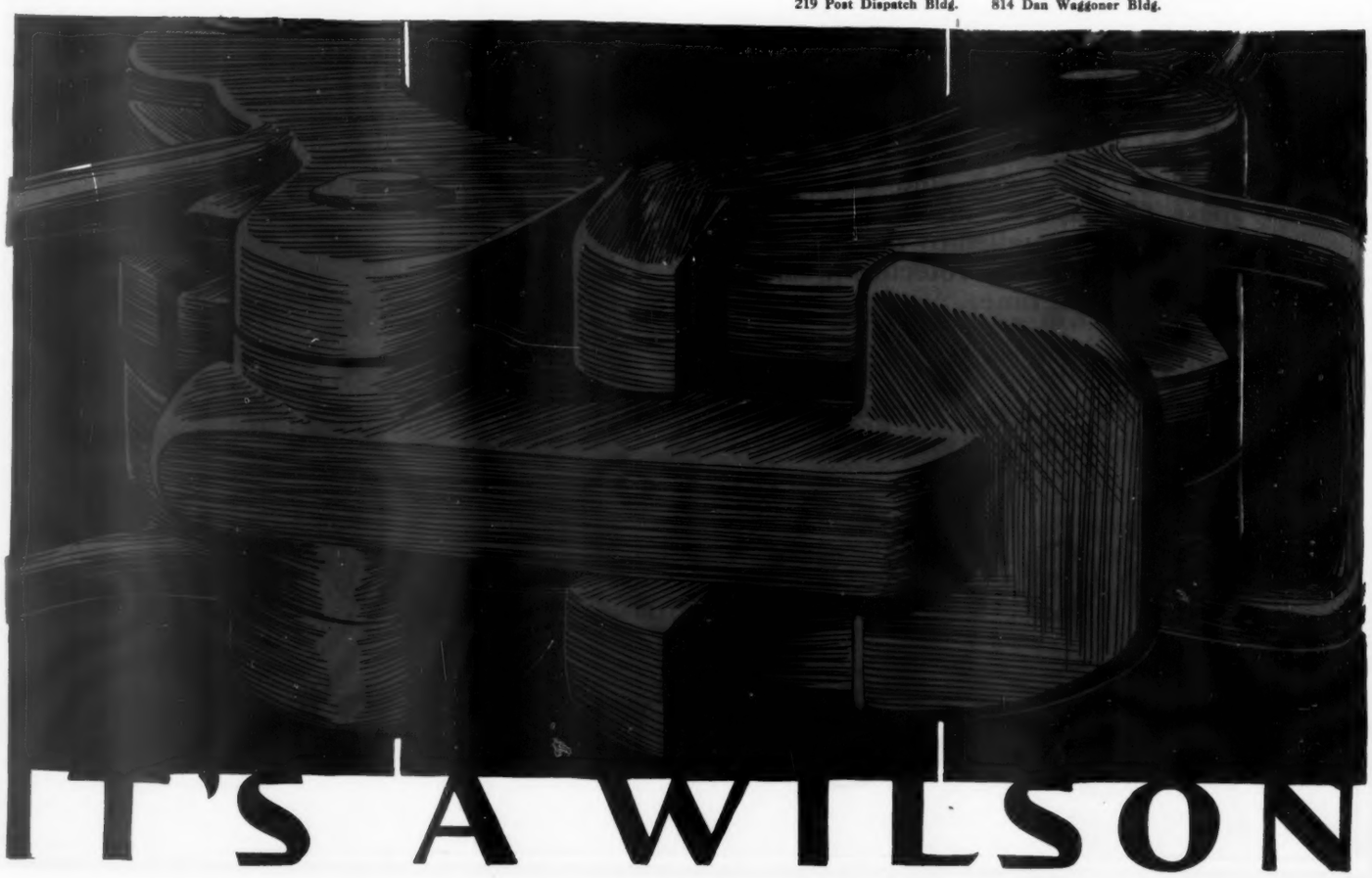


IT'S A WILSON

Fullest Protection!

The Bettis Patent Protects Users, The Bettis Protector Protects Casing

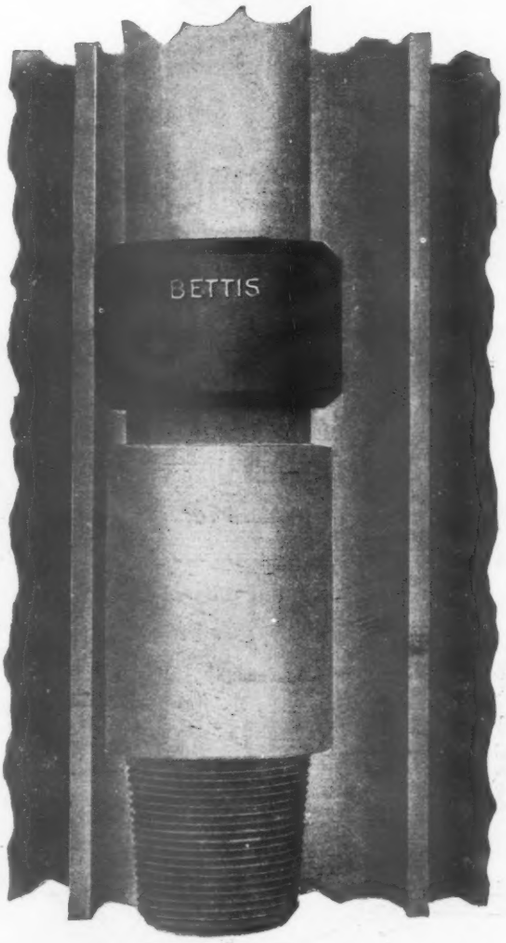
The phenomenal demand that has been created for Bettis Casing Protectors has encouraged certain manufacturers to attempt to place similar articles on the market, which in our opinion are infringements upon the original Bettis patent No. 1,573,031.

As the sole licensees of this patent and the manufacturer of Bettis Casing Protectors we shall of course protect the interests of our customers and ourselves to the limit.

We call the attention of the Industry to the matter so that purchasers will insist upon the genuine Bettis Casing Protector and avoid substitution.

Incidentally, over 14,000 of our Protectors have been sold during the past 60 days—a demand that has never been equalled by the combined sales of all other Protectors within a like period of time.

"Best bet yet"



Patterson-Ballagh Corporation
3769 Moneta Ave., Los Angeles, Calif.

Bettis Casing Protector

chant for taking as much joy as possible out of the lives of others.

Then the inevitable happens. A valve is not seated properly, either through negligence of a workman at the loading rack or some mishap in transit. Upon removal of the outlet cap a stream—sometimes a thick one—of gasoline or whatever is in the tank gushes out. Instead of rushing to the dome and doing what he may to remedy the trouble with the valve, the scared and befuddled workman usually persists in frantic attempts to get the cap back on the outlet leg. But there is about 56,000 pounds pressure back of that malevolent stream and he only succeeds in turning the deluge this way and that, always managing to squirt plenty of it upon himself.

In one instance 3,000 gallons of gasoline spouted out upon the ground at Freshpond, Long Island, before the outlet cap was coaxed back into place and an oil-soaked workman faded from the scene to renovate himself as best he might and start a hunt for another job.

An idle tank car is a profitless thing. It's worse than that. It eats up profits already earned. No labor boss ever hounded hapless members of his gang more relentlessly than an oil company drives its tank cars. A loaded tank car standing idle in the railroad company's yards is subject to a demurrage charge three days after the consignee has been notified that it is available for unloading. Empty tank cars standing idle on the oil company's own siding not only represent unemployed capital, but like almost everything else in this world, they depreciate faster than when in use. The owner welcomes an opportunity to lease them to some other company, sometimes at extremely low rental, sometimes at no rental at all, for there is at least the mileage paid by the railroad by way of remuneration.

A loading rack, with a line of tank cars "set to rack." The two men comprise a cleaning crew. The one wearing the gas mask enters the tanks. The other must keep his mate supplied with pure air. At the far end of the rack is the "doghouse," which provides shelter and a rough-and-ready office for the rack man and his helper.

"Bootleg" Causes Embarrassment

One situation that occasionally arises makes an oil refiner regret leasing tank cars to another refiner. That is when it happens that they are used for hauling "bootleg" gasoline. Patrons of the owner of the cars, which, of course, are plainly lettered with the owner's name, see the bootleg gasoline delivered in them and assume that the owner of the cars is the offender. Explanations sometimes are received with suspicion, and the incident forms one more dark spot in the tank car's life.

Different methods are employed in cleaning tank cars, which soon lose their bright exteriors, for the smoke and soot from a railroad locomotive stick tenaciously to a surface bearing the oily coating that inevitably a tank car acquires. A common method is that of scrubbing them with wire brushes and then washing them off with gasoline. Some use solutions made from preparations specially designed for the purpose. These usually remove the old paint along with the accumulations of grease and grime. Sometimes fresh coats of paint are spread over the old ones until more than a dozen layers are stratified on the tank's surface.

Of utmost importance in the wellbeing of a tank car is the promptness with which needed repairs are made. The American Railway Association estimates tank car depreciation at 3 per cent a year, but this rate can be reduced greatly, according to experts, by correcting defects as soon as they are discovered. The outlet valves are a frequent source of trouble and sometimes of loss. Dirt or scale from corrosion have a fashion of lodging on the valve seat, and after a loaded car has started from the rack for its destination leakage starts.

Canada, Cuba and Mexico, Too

A tank car may carry crude from the railroad point nearest to the field where it was produced to a refinery operated by the producing company or to some refinery buying the crude. In cases where such method of transportation is economically feasible it may be carried to a point on the Gulf of Mexico, there to be transferred to a tanker which will sail around the Florida Peninsula and northward to some one of the refineries on the Atlantic Seaboard. Other tank cars find their way up into Canada, across the Texas border into Mexico or by ocean ferry to Cuba.

Petroleum products transported by tank car from the refinery to the point of distribution include gasoline, kerosene, fuel oil, naphtha, motor oils, lubricating oils, kerosene distillates, cylinder stock, absorption oil (for use in making gasoline by the absorption process), road oil and sludge acid. This last-named substance is sulphuric acid which has been used in treating crude oil in the refinery and which is then taken to a reclamation plant.

Let's follow one or two of these tank cars on typical journeys and see where they go, anyway. Here's one that moved out of Kellyville, Okla., on June 17, 1927, loaded with gasoline, consigned to Sweetgrass, Mont., a distance of 1,713 miles. The Frisco lines took it to Kansas City, Mo.; the Chicago, Burlington & Quincy to Laurel, Mont., and the Great Northern to Sweetgrass, where it arrived June 26. It was unloaded and started back to Kellyville the next day, arriving there July 18. The car had to have a new brakeshoe at Fort Scott, Kans.; a coupler tie strap bolt at Sheridan, Wyo.; a coupler carrier iron bolt nut at Alliance, Mont., and the air had to be cleaned at Rosedale, Kans. But this mess of repairs cost only $6.08 altogether, while the car earned $51.35 mileage on the trip. Not so bad?

Here's another that left Fort Worth,

—Over 85% of the balls used in the oil industry are produced by STROM.

—built special for the oil industry for use in working barrels, hot oil pumps, etc., etc.

4 kinds, all sizes, in STAINLESS — CHROME MO-LYB-DEN-UM STEEL —BRASS—BRONZE

Strom Balls are held accurate to size to within, plus to minus, .00005 and sphericity to within .000025—*therefore all Strom Balls render a like service.* You can obtain Strom Balls through your regular supply jobber—if not, write us.

Strom Steel Ball Co.

The largest independent and exclusive steel ball manufacturer
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Pacific Coast Office
304 Pacific National Bank Building
Los Angeles, California

Better generator design

Type "M-2-S" Rig Lighting Unit

THE generator end of the Pyle-National Type "M-2-S" unit is a four-pole machine, with a wave wound armature, giving the unit its remarkable voltage regulation and reliability features. An unusually large commutator and generous construction throughout the entire electrical end make this unit especially adapted to severe service conditions found in rig lighting work.

Four brushes are used, although two would be sufficient in an ordinary design. Four brushes insure perfect commutation at all times and any one of the brushes can be lifted without disturbing the operation of the unit.

Send for bulletins describing Type "M-2-S" in detail.

The Pyle-National Company

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Canadian Agents:
The Holden Company, Ltd., Montreal, Winnipeg, Vancouver, Toronto

Export Department:
International Railway Supply Company
30 Church Street, New York City

O&GJ 5-17 Gray

POINTERS on Steel Derricks

Stability

O'Brien Steel Derricks are *strong* and *rugged*. They are scientifically designed to withstand the hardest strains. With wood, it is a difficult matter to know just what load it will stand, due to the variations in different pieces of wood. With steel, however, the various stresses and strains it will stand are definitely known and it is a very simple matter to provide the required strength. The O'Brien Steel Derrick is one upon which you can depend—whose safe loads and stresses can be accurately figured. There is no uncertainty about these important factors.

Why Experiment? O'Brien Derricks will drill your wells and pull your casing.

O'BRIEN STEEL CONSTRUCTION COMPANY, INC.
Washington, Pennsylvania

Western Representative
RIG EQUIPMENT COMPANY, 1524 So. St. Louis St.
Tulsa, Okla.
Stocked at Earlsboro, Okla.

Tex., December 6, 1927, loaded with lubricating oil, consigned to Mexico City. At Laredo, Tex., the National Railways of Mexico took the car, which arrived at the Mexican capital December 21 after its journey of 1,293 miles. This car got back to Fort Worth January 25, 1928, making the entire trip without one item of repair.

And here's a tank car that made the 2,000 miles from Kellyville, Okla., to Braintree, Mass., in 17 days. It saw a lot of country and made the return trip in 20 days. This car also did not require the repairman's services at any time. That was good luck.

Just One Thing After Another

Just as soon as a tank car delivers one load it is rushed as fast as possible to the point where it is to get another one, and off it goes again on its interminable round. Doesn't it ever get any vacation or nice little week-end rest? Oh my, yes. It has a right restful period of relaxation whenever any one of a number of things happens to it. For many things can happen to a tank car—and do happen right along. For instance:

Broken arch bars, damaged brake beam, broken column castings, wheel failures (such as worn tread, thin flanges, slid flat, worn flat, shelled-out tread, broken flange, broken tread), axle failures (such as bent axle, cut journal, couplers pulling out and breaking), damage caused by derailment or sideswiping.

When a tank develops a leak in transit the contents have to be transferred to another car and the owner must advise the railroad what disposition to make of the defective car. The tank car becomes accustomed to daily mauling. It is bumped, jerked, twisted, perhaps smashed into junk in one of those freight wrecks that still occur in spite of all precautions taken. Why should any man, even though afflicted with neuritis, pyorrhea, tobacco heart and bunions, look with envy upon the tank car?

As tank cars are moved from point to point each railroad advises the owner of the date on which it received the cars and the date on which it delivered them to another road or to their destination. In this way the owner is kept in constant touch with the whereabouts of the cars. This information is mailed direct to the owner, each car owner's name being listed in a publication known as the Official Railway Register, a copy of which is in the hands of all railway car tracing offices.

Notwithstanding the hazards and the dreary phases of a tank car's life it often achieves old age. For example, tank cars made in 1899 and used originally by Swift & Co., packers, are being used today by one of the smaller refineries.

EASTERN FIELDS

(Continued from Page 58)

the Sears Oil & Gas Co. is drilling on the A. B. Campbell farm.

Ritchie County

In Murphy district, Ritchie County, L. W. Cunningham and others are building a rig on the G. W. Haines farm. Hardman & Co. are rigging up on the J Wolfe farm. In Clay district, Wood County, the Walker Creek Oil & Gas Co. is rigging up on the John McGlaughlin farm.

On the Little Kanawha River, DeKalb district, Gilmer County, Blaine Engle & Co. have started to drill a second test on the Mariah Davis farm. In Liberty district, Marshall County, the Manufacturers Gas & Electric Co. is hauling rig timbers to a location on the James Chambers farm. In Church district, Wetzel County, the Carnegie Natural Gas Co. is drilling to the lower sands tests on the Caleb Freeland and F. M. Wade farm. In Fairmount district, Marion County, the Owens Bottle & Machine Co. has started to drill on the Scott Arnett farm. In Geary district, the United Fuel Gas Co. has started to drill on the F. P. and L. B. Parker farm.

In Mannington district, Marion County, the Manufacturers Light & Heat Co. has the rig completed for a test on the A. Cross farm. In Spencer district, Roane County, the Ohio Valley Gas Co. is building a rig on the R. M. Jennings farm. In Reedy district, D. W. Law & Co. have started to drill on the George Marshall farm. In Sheridan district, Calhoun County, McIntosh & Co. are skidding the rig on the S. F. Sturms farm. In the same district, Thomas Crowley has started to drill on the Archer Branner farm.

Southwest Pennsylvania

In Marshall Township, Allegheny County, Dunlap & Co. have a 3-bbl. pumper at a test on the Robert Dean farm. In Pine Township, Smith & Co. have completed a second test on the Bloom farm. It is a light gasser. In Indiana Township, the Chemical Oil & Gas Co.'s second test on the William W. Campbell farm is dry in the Snee sand. In the same township, J. C. Trees and others are drilling a test on the Agnes Wilson farm.

One mile east of the development on the Rutan farm, in Center Township, Greene County, the Carnegie Natural Gas Co. has drilled a test on the T. E. McNeely farm through all sands. It is a duster. In Jackson Township, the M. & H. Oil & Gas Co. has started to drill a test on the Lightner Brothers' farm. Greene County shows a marked falling off in operations in the past two months. If the decline continues it will soon have as little doing as Washington and Allegheny Counties. In Greene district, the Manufacturers Light & Heat Co. is due in the sand at a test on the Jesse Morris farm.

In Jackson Township, Greene County, Milliken & Hoskinson have drilled down an old well. It is a gasser in the Big Injun sand. In Aleppo Township, Oscar Orndoff has drilled through all lower sands old No. 1 on the Frank Gallentine farm. It is a duster.

AFGHANISTAN GRANTS CONCESSION FOR OIL

NEW YORK, May 12.—The granting of an exclusive concession for the exploitation of minerals and oils in Afghanistan to American interests has been announced by Donald C. Strachan, counsel for the promoters, who said he obtained the concession from the Ameer Amanullah in Paris in February.

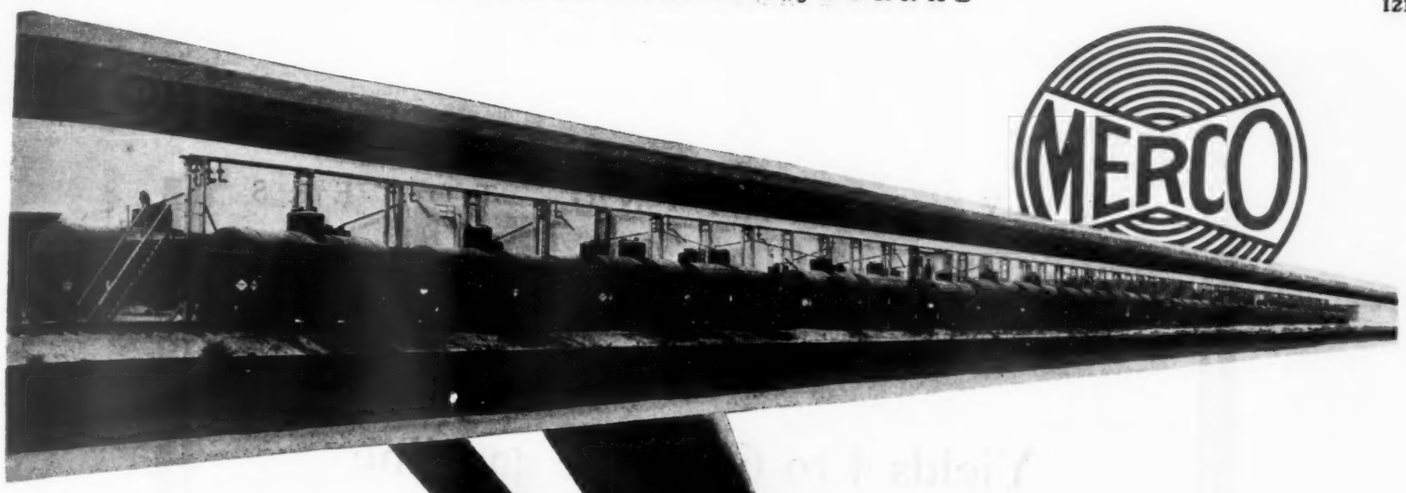
Mr. Strachan said an American company had been formed to develop the concession and work would start in about six months. He said no public financing would be involved. The concession runs for 50 years after which it reverts to the Ameer. The Department of State has been notified of the transaction. The name of the new company is the Afghan-American Trading Co.

"Afghanistan is rich in many minerals, including coal, iron, copper and oil," said Mr. Strachan. "None of these resources has been developed, and the inhabitants are even for the most part ignorant of the use of coal. We propose to exploit these resources and sell their products in the Oriental markets."

Mr. Strachan plans to start soon for Kabul, the capital of Afghanistan and pave the way for the arrival of American geologists and minerologists, who are to survey the country. He feels that the Ameer decided to employ American capital to modernize his country in order to avoid entangling alliance with either Great Britain or Russia.

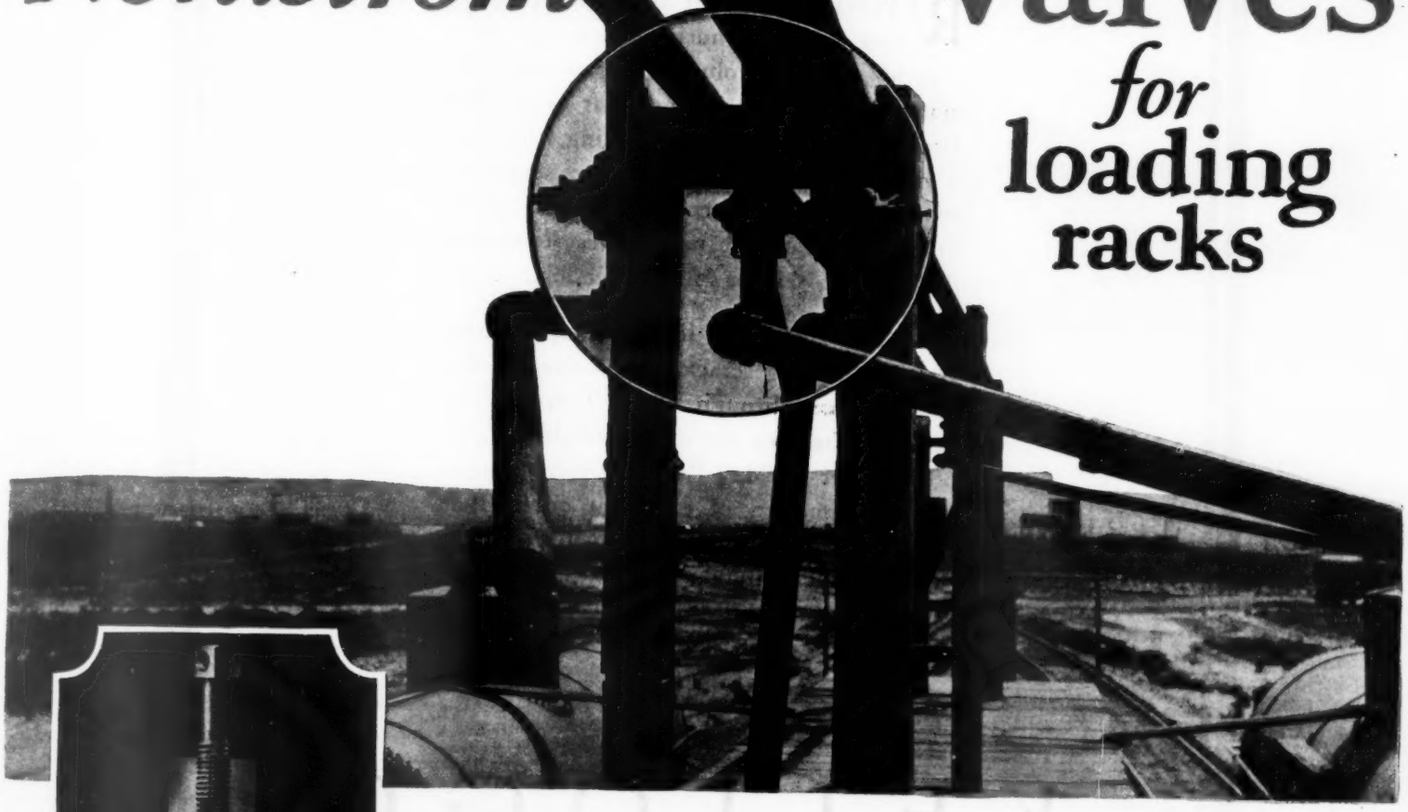
FREAK GAS WELL

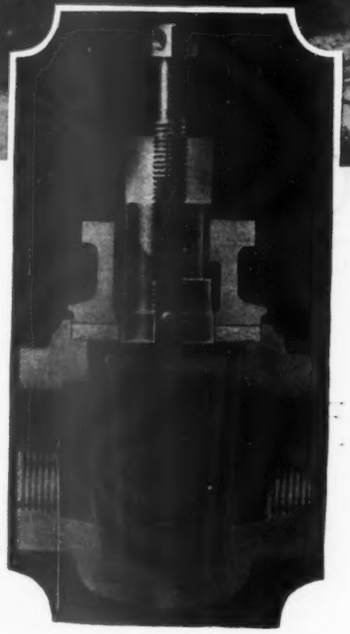
WAYNESBURG, Pa., May 12.—What is regarded by oil and gas men of this district as one of the most freakish gas wells of recent years has been struck in Wayne Township by the Peoples Natural Gas Co. The pay was struck in stray sand below the Pittsburgh vein of coal at a depth of 900 feet and a flow of 1,000,000 feet of gas has been secured. As the well was struck with the 13-inch casing in the well, operators are at a loss as to methods of controlling the unusual flow.



MERCO

Nordstrom Valves *for* loading racks





Not a drop will leak through Nordstrom Valves. The unique method of lubricating the plug *under pressure* prevents leakage. Absolute insurance against leakage is essential where valves are used for loading rack service. Just a quarter turn opens the valve—thus saving time.

The lubricant screw can be removed while the valve is in service to reload with stick lubricant. A check valve within automatically seals in the lubricant while reloading.

Special Merco lubricant in stick form is furnished for various services and temperatures. This lubricant not only seals the plug hydraulically but keeps it from sticking.

Merco Nordstrom Valve Co.

SUBSIDIARY OF THE MERRILL COMPANY

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San Francisco
121 Second St.

Cleveland
Engineers Bldg.

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KENTUCKY-TENNESSEE

(Continued from Page 60)

kiff Pool, is only showing for about 1 bbl. production. Sand was found at from 347 to 353 feet and drilled to a total depth of 497 feet and shot with 20 quarts.

Daviess County

Reports from D. C. Stimson and others' No. 1 on the Mayfield farm, in the Hayden Pool, Daviess County, and northeast of Andersonville, found 22 feet of pay sand at a depth of 918 feet and reported at 150 bbls. initial production.

The Creek Drilling Co. set a string of 1,226 feet of casing in No. 2 on the Jeff Leet 68 acres, in the Brown Pool, got the sand at from 1,226 to 1,268 feet and shot with 220 quarts, with an initial production of 70 bbls.

Conrad Kipp and others' No. 6 well, 600 feet from the north and west lines of the Mattingley heirs farm of 100 acres, is a 30-bbl. pumper.

Sam J. Patrick and Son's No. 1 on the Claud Alvey farm, near St. Raphael Church, in the southwestern part of Daviess County, is reported dry at 1,560 feet.

The Lancaster Ohio Syndicate with H. A. Henry drilled a dry hole in a test on the Richard Murphy farm, near Curdysville.

Allen County

In the Gainesville area of Allen County, the Mid-Southern Oil Co.'s No. 20 on the E. H. Woods 2,700-acre ranch came in a duster at 272 feet. No. 21, same farm, is drilling. In the same area, Stumbo & Stumbo's No. 5 on the Levi Hinton farm was dry at 300 feet.

Hancock County

Tri-County Oil & Gas Co.'s test on the Lee Rosenblott 60 acres, north of Pellville, in Hancock County, is credited with an initial production of 35 bbls. It is in the southwest corner of the lease.

Field Pickups

McMahon and Coombs are due in the sand with a second well on the C. M. Jones farm, 3 miles west of Whitesville, in Daviess County. On an adjoining lease to the Jones, the well of Wade & Moore on the Burton 20 acres, south of the Jones well, has been shot, but the value of the well will not be known until the cleaning out job, which is a bad one, is completed.

Leeper and others are delayed by a fishing job at No. 3 on the Fred Weir farm, in the Jolly Pool in the northwestern part of Ohio County, just on top of the sand.

A test well has been started 1½ miles southeast of Hawesville, in Hancock County, McClanahan and others on the Fred Alsop farm. This is the closest test yet made to Hawesville, and the structure has been carefully studied and indicates oil should be found in that area.

A test is to be drilled on the Young farm on the Hardinsburg Road, 3 miles east of Owensboro, in Daviess County, where many years ago oil was found by drillers for the late John G. Delker, who was looking for gas. At that time oil was down to 35 cents a barrel, and as oil was not wanted by the owners the well was abandoned.

Chenault and Brooks, drilling a test on the P. R. Kelley land, at Friendship School, near Fordsville, have a bad curve after the shot and this is being worked upon as the well made a fairly good oil showing. This well looks as though a new producing area had been found and more tests will be made.

Leeper Oil Co. is drilling No. 10 on the John Roby farm, in the Pellville area and in what is known as the Roby Pool, in Daviess County. The Ohio Oil Co. is about due in with No. 3 on the Lawrence Roby 87 acres, in the same pool.

John T. Lewis and C. H. Maxey are drilling a test on the Frank Barrett 100 acres, east of the C. M. Jones well, west of Whitesville, in Daviess County.

Miller and Damron are trying to shut off the water found in No. 1 on the Rose Tyler farm, south of the Hayden farm, in the Hayden Pool of Daviess County. The well made an excellent showing of oil.

Bob Palmer and others are about ready to drill in their test on the Riggs land, 3 miles east of Buford and between there and the Ambrose Pool in Ohio County. Doug Bolling connected his well with the pipe line on the Miller-Aud-Hazel lease, north of the Mattingley lease, north of Knottsville. This is the most northerly point the pipe line has extended in that direction. Every well in this area has been connected to the pipe line.

There are 37 wells now pmping in the Pellville Pool which extends down into southeastern Daviess County. There are 9 on the John Roby 67 acres; 1 on the 30-acre tract of the same owner; 6 on the Mattingley; 4 on the Miles; 5 on the Coombs, 2 each on the Carden and Veatch 200 acres, and 1 each on the Miller-Aud-Hazel, Petrie and I. C. Stevens, 3 on the Barnett and 2 on the Lawrence Roby.

Daley & Lowman are starting a test on the Fate Moorman farm, south of Utica, in Daviess County.

CENTRAL WEST FIELDS

(Continued from Page 60)

Township, same county, at 1,995 feet.

In Pike County, Clay Township, the Murphy Oil Co.'s No. 9, in the southeast corner of the Stewart Brothers' farm, in the southwest quarter of Section 13, topped the sand at 1,342 feet and found 7 feet of sand and went to a total depth of 1,352 feet and shot with 30 quarts, resulting in a 10-bbl. initial pumper. In Madison Township, same county, A. B. Bement abandoned No. 1 on the W. H. Shawhan farm, Lot 18.

In Reeves Township, Daviess County, Bell Brothers, Phipps & Blosser's test on the J. P. Cavanaugh farm, Section 17, produced an initial of 8 bbls. from a sand found at from 735 to 749 feet. Ruble & Collier are drilling a test on the Cal Morgan farm, Section 17, same township. Hart Brothers are working at a test on the Marion Graves farm, in Barr Township, same county.

The Siosi Pool had another dry hole added to it by the test drilled by Wilson & Marshall, in the northwest corner of the Ernest Bleemell farm, in the northwest quarter of the northeast quarter of Section 18, Prairie Creek Township, Vigo County, at a depth of 2,380 feet.

Southwest of Huntington, in Cass Township, Dubois County, Wheeler and others are shut down at a test on the William Meissner farm, Section 16, at a depth of 1,320 feet.

D. D. Flannagan drilled a dry hole in his No. 3 well, 575 feet from the south line and 200 feet from the east line of the Doctor Hoover farm, in the southwest quarter of Section 2, Jackson Township, Spencer County, at a depth of 1,345 feet.

Geologist's Report

T. M. Kingsburry, state gas supervisor, Department of Conservation, Division of Geology, Indianapolis, Ind., says in his report on oil and gas developments in parts of Indiana:

"There is a great deal of leasing going on in various parts of the State, especially in the southwestern portion. Leases have been taken this spring in Warrick, Spencer, Perry, southern part of Crawford, southwestern Harrison, where a well has been started; Hendricks, Jasper, Pulaski, Vigo, Sullivan and many other counties.

"All companies and individuals considering operating in Indiana this year and who are not familiar with the laws and regulations affecting oil and gas operations in this State are urged to write to this office for a bulletin on this subject which will be sent free. This office will be glad to co-operate with operators in any way possible in supplying information on geological conditions in various parts of the State. One publication of this division of geology gives some information on each county, includes a small geological map of the State and contains logs of about 1,500 wells. It is a special publication obtainable through this office for $1. Please send us copies of logs of all wells drilled in Indiana. This is required by a department regulation. We

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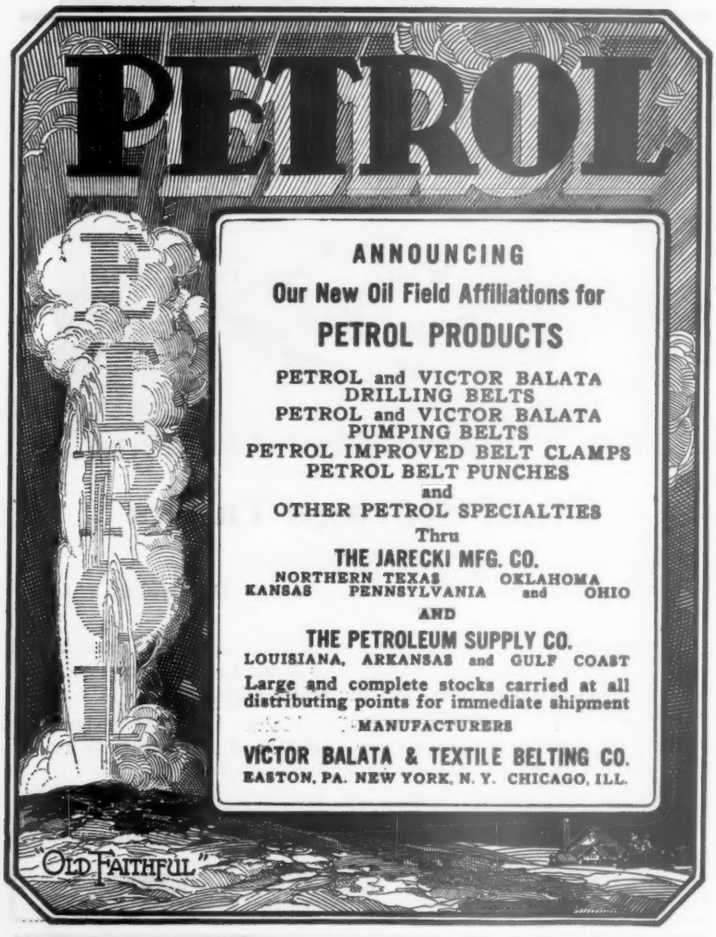
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"OLD FAITHFUL"

would appreciate information on wells that are being drilled, giving location, owner of farm, and by whom they are drilled. Report leaking or abandoned wells, also.

"Fountain County: The deep test being drilled on the William B. Coffing farm, Section 28, Troy Township, northeast of Covington, was down 2,468 feet, according to last reports, and it was intended to continue drilling as soon as favorable spring weather arrives.

"Gibson County: The Texana Oil Co. completed a 35-bbl. well on the K. L. Crackel farm, Section 6, Washington Township, in the Mount Olympus Pool. This well which was located by H. L. Barnett, encountered gas with a pressure of 435 pounds at about 1,400 feet and the oil at a little more than 1,500 feet. The Big Four Oil Co. brought in a 60-bbl. well on the John Jones farm, Section 19, same township, at a depth of 1,667 feet. Bell Brothers and others are drilling on the Catt and Hatfield farm, Section 6, Center Township, and J. S. Young got a dry hole on the Elizabeth Carrithers farm, Section 35. Lex Johnson and others have moved a rig near Skelton, and Arthur Mauk and others got a dry hole on the Robert Howe farm, Section 1, Patoka Township, at 1,160 feet.

"Jay County: The Waterloo Oil & Gas Co. is drilling No. 8 on the Clarence Brinkerhoff farm, Section 21, Bear Creek Township. In Penn Township, the Amber Oil & Producing Co. is drilling No. 15 on the J. M. Sutton farm, Section 21.

"Madison County: A 10-bbl. well is reported on the Frank Dodson farm, northwest of Summitville, drilled by Claude Thompson. The drillers are having trouble to get rid of the water.

"Martin County: Phipps and Blosser have started a test well on the Mrs. August Prelemire farm, north of Loogootee.

"Pike County: The Illpave Oil Co. got a dry well on the Robert A. Hyneman farm, Survey 4, Clay Township. Moulton, Lamar, Noble & Loughmiller got a showing of oil on the Preston heirs' lease, Section 19, Washington Township, and abandoned the well, and Miller, Davis and others got a dry well at 1,428 feet in No. 4 James S. Wilson farm, Section 13, Logan Township.

"Rush County: W. L. Horkless and others' test on the Horkless farm, southeast of Carthage, is a good gas well.

"Starke County: Oil operators are taking leases in Center, California and Wayne Townships and plan to start a well in May.

"Spencer County: There has been considerable leasing in this county due to production across the Ohio River in Kentucky. Dr. Shirley Land and others plan to drill in Section 19, Ohio Township. Plans have been made to start at least three other wells in this area soon.

"Sullivan County: Ellis & Whitlock are drilling No. 1 Thomas farm, Section 7, Fairbanks Township."

Illinois

Four completions were reported from the Illinois fields, but they developed no oil production, one being a gas well and three were dry holes. In Honey Creek Township, Crawford County, Dill & Weger's test in the southwest corner of the Dale Weger farm, in the southwest quarter of Section 11, is a light gas well from a sand at 670 feet.

In Dennison Township, Lawrence County, Phipps, Blosser and others abandoned No. 6 Simon Seed farm, Section 19.

In Wabash Township, Wabash County, the Coon Creek Oil Co. dropped the tubing and rods in No. 4 on the Alice R. Biehl farm, Section 15, and abandoned the well. Joe S. Young, Jr., and others' second well in the northwest corner of the John Leek farm, in the northeast quarter of Section 22, and No. 1 on the Cora D. Kogan farm, were dry holes. The Kogan well was in the southeast corner of the lease which is in the northwest quarter of the section.

Clark County Favorable

The current issue of Illinois Petroleum, a periodical published at Urbana, by the Illinois State Geological Survey, contains a favorable report on oil prospects in eastern Clark County, where interest has been renewed by the discovery of wells producing from 30 to 100 bbls. a day just across the Wabash River in Sullivan County, Indiana.

The recent drilling has provided new information on the rock structure and stratigraph, and the purpose of the present report, written by Gail F. Moulton and Jackson Young of the geological survey staff, is to make this information available for the use of oil operators.

An area in the vicinity of Marshall is described as favorable for testing and a program of drilling is outlined. A map accompanying the report shows that near Marshall the Devonian limestone forms an anticlinal nose or terrace, which is apparently of sufficient size to merit testing.

It is recommended that wells should be drilled in eastern Clark County to determine structural conditions which might be favorable for the accumulation of oil in the upper part of the Devonian limestone. Exact locations are designated for test holes to be put down before deeper drilling is undertaken.

"A program of this sort is believed to be suitable for either a large producing organization, or for an association of smaller producers, for although the prospects of getting oil production appear to be fairly good it is apparent that proper testing of this locality might require a larger expenditure than the usual Illinois wildcat proposition," the report says.

"The State Geological Survey will be glad to co-operate with any organization desiring to undertake the testing of eastern Clark County, either in the favorable area described in this report or in localities which may appear favorable as a result of subsequent drilling. This cooperation will consist of furnishing any available detailed information from the files of the survey, determining the elevations of wells, interpreting the data from the records of any wells drilled and having chemical analysis made of the mineral content of water from the Devonian limestone from any wells located in that part of Illinois."

PROGRESS IN MIXED GAS RESEARCH REPORTED

(Continued from Page 64)

believed that the results obtained will hold for other common manufactured gas mixtures.

"In this series of tests, after the appliances had been adjusted on coke oven gas, the increasing specific gravity, as water gas was mixed with the coke oven gas, tended to increase the gas rate and to harden the flame, thus increasing the likelihood of flash back or noisy burner operation. On the other hand, when the appliances were adjusted on the relatively high gravity water gas, the addition of coke oven lowered the specific gravity of the mixture, tending to increase the gas rate and, at the same time, to soften the flame. This eventually led to overcrowding the combustion chamber and flue passages, thus causing incomplete combustion. The possibilities of making a midway adjustment, which reduced either of the two tendencies mentioned above, was also investigated by adjusting all the appliances on a mixture of the base gases, this mixture having a specific gravity of about 0.53. Tests were then made with increased proportions of both water gas and coke oven gas.

"Further investigation of the effect of specific gravity variations was made by testing with various mixtures having a heating value of 450 B.t.u. per cubic foot. In one series of tests the appliances were adjusted on a mixture of coke oven and producer gas with a specific gravity of 0.52. Without any change in adjustment, the appliances were then operated on a mixture of coke oven and blue gas having a specific gravity of 0.46, a decrease of about 10 per cent. These tests were followed by experiments on mixtures of coke oven, blue and carburetted water gas. The general effect of this series of tests was to vary the gravity both upward and downward from that of the adjustment gas.

Gravity Chief Point

"Another series of tests on mixtures having a heating value of 450 B.t.u. was

Left: Recent photograph of first Reid 24' Band Wheel Power ever made. Continuous service with no expense to date.

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WHEN the Joseph Reid Gas Engine Company made the first 24 foot Band Wheel Power, with a 24 inch eccentric, Superintendent Elder of the Theta Oil Company bought it for his Company. That was in June, 1923, and for months the T. F. Schneider Lease, Section 10-23-13, Gridley field, was a sort of Mecca for the Oil Men of Kansas and Oklahoma. To all comers Mr. Elder simply said—"She's workin' fine!"

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A tendency of the discharge pressure to rise overbalances the weight on the lever and the valve moves toward its seat, throttling the suction sufficiently to restore and maintain the discharge pressure at a fixed point.

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conducted with the appliances adjusted on a base gas of blue gas and coke oven gas. Carburetted water gas was added in varying proportions, thus increasing the specific gravity, the idea being to determine whether it is possible with such a base gas to fill peak load demands by adding the water gas.

"The principal variant in all of the tests described above is that of specific gravity. Although it is true that the composition varied, this occurred more in the class of quick-burning constituents rather than in the total proportion of quick-burning and slow-burning gases. For this reason it is felt that variations in composition of the manufactured gases previously mentioned have little effect on the operation of domestic gas appliances. Industrial appliances, however, have not been investigated sufficiently to warrant drawing conclusions as to their operation under such changes. It is probable that at least a portion of the work will be repeated with special attention to industrial equipment.

"From the results obtained on domestic appliances, which cover completeness of combustion, burner operating characteristics, and the rate of heat liberation, it appears that specific gravities may vary from about 10 per cent below to 20 per cent above that of the adjustment gas without causing unsatisfactory appliance operation. However, it should be noted that in each series of tests there was no variation in heating value and that the normal pressure chosen was 3.5 inches of water."

UPWARD TREND IN GASOLINE TANK WAGON PRICES

(Continued from Page 58)

the retail price as a means of stabilizing the retail market and the future of retail prices is expected to have a gradual but firm advance.

GASOLINE PRICES EFFECTIVE MAY 1, 1928

Table showing gasoline tank wagon prices as of May 1, 1928, exclusive of taxes in 50 representative cities, including the amount and the date of changes since April 1, 1928. High and low prices and state taxes also given.

	Prices Apr. 1	April Changes		Prices May 1	High and Low 1927		1926		Tax May 1, 1928
Birmingham, Ala.	14.0	....	....	14.0	18.0	14.0	20.0	16.0	4.0
Phoenix, Ariz.	19.0	....	....	19.0	19.0	16.0	22.0	19.0	3.0
Little Rock, Ark.	14.0	2 15.0	....	15.0	15.0	11.0	18.0	14.0	5.0
San Francisco, Calif.	14.0	....	....	14.0	14.0	9.0	16.0	13.0	3.0
Denver, Colo.	14.0	....	....	14.0	18.0	13.0	20.0	16.0	3.0
Hartford, Conn.	18.0	....	....	18.0	22.0	18.0	21.0	17.0	2.0
Dover, Del.	16.0	....	....	16.0	19.0	16.0	20.0	17.0	3.0
Jacksonville, Fla.	13.0	....	....	13.0	16.0	10.0	19.0	12.0	5.0
Atlanta, Ga.	13.0	....	....	13.0	18.0	10.0	21.0	14.0	4.0
Boise, Idaho	19.5	....	....	19.5	22.5	19.5	24.0	20.0	4.0
Peoria, Ill.	13.2	....	....	13.2	18.2	9.0	19.2	10.5	...
Chicago, Ill.	14.0	....	....	14.0	17.0	14.0	18.0	15.0	...
Indianapolis, Ind.	13.2	....	....	13.2	18.2	10.2	19.2	16.2	3.0
Des Moines, Iowa	11.9	19 13.5	....	13.5	16.0	9.9	19.5	16.0	3.0
Wichita, Kans.	11.8	....	....	11.8	15.8	10.8	16.8	14.8	2.0
Louisville, Ky.	13.0	....	....	13.0	17.0	13.0	20.0	17.0	5.0
New Orleans, La.	12.5	4 13.5	....	13.5	14.5	11.5	17.5	13.5	*3.0
Augusta, Me.	17.0	....	....	17.0	22.0	17.0	21.0	17.0	4.0
Baltimore, Md.	16.0	....	....	16.0	19.0	16.0	19.0	16.0	4.0
Springfield, Mass.	18.0	....	....	18.0	22.0	12.0	21.0	17.0	...
Detroit, Mich.	13.8	....	....	13.8	18.8	11.8	19.8	16.8	3.0
Duluth, Minn.	12.5	19 14.5	....	14.5	19.5	12.5	20.5	15.5	2.0
Natchez, Miss.	12.5	....	....	12.5	15.5	12.5	18.5	15.5	4.0
Kansas City, Mo.	10.9	12 12.9	....	12.9	17.9	10.9	18.9	15.9	*3.0
Helena, Mont.	19.5	....	....	19.5	22.0	19.5	24.0	21.0	3.0
Omaha, Neb.	13.25	....	....	13.25	14.25	12.25	19.25	14.25	2.0
Reno, Nev.	18.0	....	....	18.0	18.0	15.0	19.5	16.5	4.0
Newark, N. J.	16.0	....	....	16.0	19.0	16.0	19.0	15.0	3.0
Albuquerque, N. Mex.	16.0	3 17.0	....	17.0	20.0	16.0	26.5	20.0	5.0
New York, N. Y.	17.0	....	....	17.0	22.0	17.0	21.0	17.0	...
Charlotte, N. C.	16.0	....	....	16.0	19.0	16.0	19.5	15.5	4.0
Fargo, N. Dak.	15.9	....	....	15.9	20.9	12.0	21.0	18.9	3.0
Cleveland, Ohio	14.0	....	....	14.0	19.0	14.0	20.0	16.0	3.0
Tulsa, Okla.	12.0	2 13.0	19 12.0	12.0	15.0	10.0	17.0	13.0	3.0
Portland, Ore.	14.5	....	....	14.5	14.5	11.0	16.0	13.0	3.0
Philadelphia, Pa.	16.0	....	....	16.0	19.0	12.0	20.0	17.0	*3.0
Providence, R. I.	18.0	....	....	18.0	22.0	17.0	21.0	17.0	3.0
Charleston, S. C.	15.0	....	....	15.0	19.0	15.0	19.5	15.0	5.0
Huron, S. Dak.	14.5	....	....	14.5	19.5	11.5	20.5	14.0	4.0
Memphis, Tenn.	14.0	24 15.0	....	15.0	15.0	10.0	18.5	13.5	3.0
Dallas, Tex.	10.0	2 11.0	....	11.0	13.0	10.0	17.0	13.0	3.0
Salt Lake City, Utah	16.5	....	....	16.5	20.5	16.5	22.5	18.5	3.5
Burlington, Vt.	17.0	....	....	17.0	22.0	17.0	21.0	18.0	2.0
Norfolk, Va.	16.0	....	....	16.0	18.0	16.0	19.0	15.0	2/22 5.0
Washington, D. C.	16.0	....	....	16.0	19.0	16.0	19.0	15.0	2.0
Charleston, W. Va.	16.0	....	....	16.0	18.0	16.0	19.0	15.0	4.0
Milwaukee, Wis.	13.1	....	....	13.1	18.1	13.1	19.1	16.1	2.0
Casper, Wyo.	14.0	....	....	14.0	18.0	14.0	20.0	17.0	3.0
Seattle, Wash.	14.5	....	....	14.5	14.5	11.0	16.0	13.0	2.0
Minneapolis, Minn.	13.0	....	....	13.0	15.2	11.1	20.2	15.2	3.0
Average price	14.81	....	....	15.02	18.15	13.55	19.717	15.713	3.01

*State tax 2 cents, remainder city tax.

Based on dumps of 50 gallons within the Standard Oil Co. of Indiana territory where quantity discounts are given. Actual tank wagon prices in the territory are 1 cent higher except in Chicago.

Improving brand-new tools

SOUNDS like a queer idea. Yet many a brand-new casting, forging or piece of equipment is coated with Haynes Stellite before it is put to work. Maybe it is only a drop of Stellite on a belt shifter. Maybe it is enough to cover the edge of an oil well tool. Or it may be as much as 150 pounds on the wearing surfaces of a dredging cutter or grinder ring.

Regardless of the amount, Haynes Stellite pays for itself many times over. It increases production, reduces tool costs, saves time and labor.

Here is the reason. Haynes Stellite is an alloy of cobalt, chromium and tungsten. There's a combination that is hard — and hard to beat. It resists abrasion better than any other metal, and outlasts steel three to five times.

Many manufacturers now supply Stellited parts. In the form of welding rod, Haynes Stellite is always available. What's more, by the Stelliting process with the oxy-acetylene torch, you can apply it right in your own shop.

Be on the lookout for our sales representative and ask him some questions about the uses of Haynes Stellite. He may be able to save you some money.

Stelliting with

HAYNES STELLITE COMPANY

Unit of Union Carbide and Carbon Corporation

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Cleveland—*628 Keith Building*
Detroit—*4-240 Gen'l Motors Bldg.*
Houston—*6119 Harrisburg Blvd.*
Los Angeles—*1310 Santee Street*
New York—*30 East 42d Street*
San Francisco—*114 Sansome St.*
Tulsa—*Exchange Nat. Bank Bldg.*

General Offices—Kokomo, Indiana

HAYNES STELLITE

TIMKEN
Tapered
ROLLER BEARINGS
On the Crankshaft

More Timken Bearings are used in the oil fields than all other anti-friction makes combined. Endurance is the reason. The basis of Timken endurance is the exclusive combination of Timken tapered construction, Timken *POSITIVELY ALIGNED ROLLS*, and Timken-made electric steel.

A bearing has surely proved itself worthy of highest confidence when it is used for an application like the crankshaft, by a manufacturer like Oil Well Supply Co. It is more than ordinarily significant that Timken Bearings were selected for the right and left crankshaft positions on the new 12″ x 12″ "OILWELL" Oilbath fully enclosed Twin Cylinder Steam Drilling Engine. Yet this is exactly in line with the decided trend to Timken Bearings in all types of oil field equipment.

Timkens are first where endurance is the first requirement. "More than anti-friction," Timkens not only save power and lubricant, but overcome the wear of thrust, shock and weight. Timkens permanently protect alignment. Timkens permit tight seals. Timkens make for simplicity and freedom from attention.

Under the ceaseless impact of steam engine power strokes, or under the brutal thrust load in big swivels, Timken endurance *keeps things going fast.*

THE TIMKEN ROLLER BEARING CO., CANTON, OHIO

SOUTHWEST TEXAS FIELDS

(Continued from Page 49)

derrick up 3,300 feet to north line and 1,120 feet to west line.

O. W. Killam's No. 9 Bruni, Block 64, Albrcas Pool, Webb County, is moving on; No. 19 Bruni, same field and block, has derrick up; No. 11 Bruni, same field and block, is moving on.

Cole Petroleum Co.'s No. 61 Benavides, Survey 412, Block 4, is location offsetting Magnolia Petroleum Co.'s No. 1 Valdez.

Cole Gas Field—Duval

Magnolia Petroleum Co.'s No. 5 Benavides, Block 2, O'Hern & Seacord Subdivision, 125 feet to northeast lines and 400 feet to northwest lines (location changed); No. 1 A. M. Bruni, Survey 15, Block 10, located 150 feet to northeast and southeast lines, is drilling at 500 feet. Houston Oil Co.'s (Humble) No. 3 Cuellar, Share 1, Cuellar grant, 3,992 feet to northwest lines and 1,601.4 feet to northeast lines, is moving on. Houston Oil Co.'s (Sun) No. B-2 Lopez, Survey 319, Block 3, is location 155 feet to northeast and southeast lines.

Humble-Reiter-Foster Field

Humble Oil & Refining Co.'s No. 8 Kohler, Survey 405, is location 150 feet to east lines and 450 feet to south lines.

Randado Field—Jim Hogg

Moody Corp.s No. 15 Palacious, Survey 291, Block 22, located 450 feet to east line and 150 feet to north line, has spudded in.

Schott Field—Webb

Magnolia Petroleum Co.'s No. 1 M. & F. Garcia, Survey 58, located 150 feet to north line and 1,620 feet to east line, is rigging up.

Albercas Pool

Newton Drilling Co.'s No. 2 Bruni, Block 65, located 1,770 feet to south line and 150 feet to east line, is drilling at 1,940 feet. O. W. Killam's No. 8 Bruni, Block 64, located 1,470 feet to south line and 75 feet to west line, has sand at 2,176-82 feet with tubing in hole, flowed 300 bbls. first day. Killam-Simms (Maddox) No. 1 Bruni, Block 65, located 1,170 feet to south line and 150 feet to east line, is coring below 2,100 feet.

Aviator or Bruni Tracts

Aviator Gas Co.'s No. 1 A. M. Bruni, Survey 2,083, located 550 feet to east line and 1,000 feet to south line, has derrick up. Salley and others' No. 8 Puig, Block 3, is location 150 feet to north and west lines.

Cole Field No. 2

Magnolia Petroleum Co.'s No. 1 Valdez, Survey 754, located 150 feet to south and west lines, at 2,328-34 feet tested large gasser through drill stem with oil on the bottom. Cole Petroleum Co.'s No. 57 Benavides, Survey 412, Block 3, located 361 feet to east line and 162 feet to south line, at 2,330-38 feet tested 800 feet of oil in hole; No. 58 Benavides, Survey 412, Block 3, located 460 feet to east line and 160 feet to north line, is rigged up; No. 59 Benavides, Survey 412, Block 3, located 760 feet to east line and 160 feet to south line, is rigged up; No. 60 Benavides, Survey 412, Block 6, is location 160 feet to north line and 460 feet to east line.

Mirando Valley Pool—Zapata

William R. Jewell's No. 2 Hinnant, Survey 10, Block 4, located 235 feet to southwest lines and 150 feet to southeast lines, is drilling at 1,300 feet.

Charco Redondo Field

W. R. Duke's No. B-1 J. M. G. Martinez, Block 17, W. R. Duke Subdivision, 150 feet to southeast and southwest lines, is drilling at 632 feet.

Dale Field—Caldwell

Fred Adams' No. 1 O. T. Moore, 600 feet from The Texas Company's No. 1 Moore is drilling. The Texas Company's No. 6 W. N. Osteen, Swearingen Survey, is location 620 feet to northwest lines and 150 feet to southwest lines; No. 7 Lackey, J. Gilbert Survey, is location.

Luling Field

Magnolia Petroleum Co.'s No. 1 Daisy Hughes, is rigging up; No. 12 W. J. Tiller, J. Henry Survey, 350 feet northwest of No. 1, is drilling at 2,086 feet. North & South's No. 1 Kelly is drilling in schist at 7,630 feet; No. 2 Tiller is also in schist at 7,285 feet.

Bruner Field

Lu-Tex Oil Co.'s No. 1 Wilson, A. Floyd Survey, 2,320 feet to east line and 200 feet to south line and 820 feet north and 2 degrees south of No. 1 Davis, the discovery well, is ready to spud in. J. H. Dufner and J. Shoenberg's No. 1 Irene Huff is location 1 mile north of No. 1 Davis. Detex Oil Co.'s No. 1 M. August, A. Floyd Survey, 150 feet to southwest and southeast lines, has been spudded in.

Lockhart Field

Charles Carter and others' No. 1 Ike Heidenheimer, John R. Miller Survey, 150 feet to north and east lines of 20-acre tract, has been spudded in. Davis & Ford's No. 1 J. M. Young, John R. Miller Survey, 150 feet to east and south lines of 46-acre lease, has derrick up and rig ordered out. Roxana Petroleum Corp.'s No. 1 Medford, offsetting The Texas Company's No. 1 Medford is location. The Texas Company's No. 3 F. M. Branyon is location in the Richard Jarmon Survey; No. 1 Medford, Dillard Cooper Survey, 150 feet to south line of farm and 150 feet west of creek across east end, topped chalk at 1,844 feet with core showing oil and will core all the way through; No. 1 F. C. Teas, John R. Miller Survey, 150 feet to north and west lines of 50-acre tract, is fishing at 1,150 feet. Claude Smith and The Texas Company's No. 1 M. E. Lancaster, Dillard Cooper Survey, 2,280 feet to east of road and 150 feet to south line of farm, at 2,074 feet in chalk topped at 2,000 feet is to make Lewis drill stem test.

Kingsville Field—Kleberg

Humble Oil & Refining Co.'s No. A-5 Dennett, Section 39, Block 1, is drilling at 258 feet; No. 2 Kivlin, Section 39, Block 5, at 695 feet has gas blow, the most shallow yet found in the field and about two weeks will be required to mud it off so that drilling can be resumed, as it cratered for about 200 feet.

Adams Gas Field—Medina

Lange & Jarmon's No. 1 Adams, Survey 71, located 500 feet to north and west lines of Block 20, is standing at 164 feet. Golden West Oil Co.'s No. 2 Adams, Survey 14, Lot 2, located 200 feet to south and west lines of lot, has been spudded in.

Saxet Field—Nueces

The Texas Company's No. 1 State, Survey 689, located 150 feet to west line and 425 feet to south line, at 2,100 feet approximate depth has drill stem stuck in the hole.

Refugio Field—Refugio

Heap & Retherford's No. 1 Strauch, Refugio Townsite, Lot 13, center of 40-acre lot at 3,676 feet has set casing and will drill in within a few days.

White Point Field—San Patricio

Alamo Drilling & Leasing Co.'s No. 1 Hunter, Seguin Survey, is preparing to set casing at 1,880 feet. Houston Oil Co.'s No. 5 Humble fee is location; No. 3 Ragsdale is location. Saxet Oil Co.'s No. 3 White Point Development Co. is location.

West Gas Field—Zavala

Tritex Oil Corp.'s No. 3 West is location amout 1 mile from No. 2 recently completed.

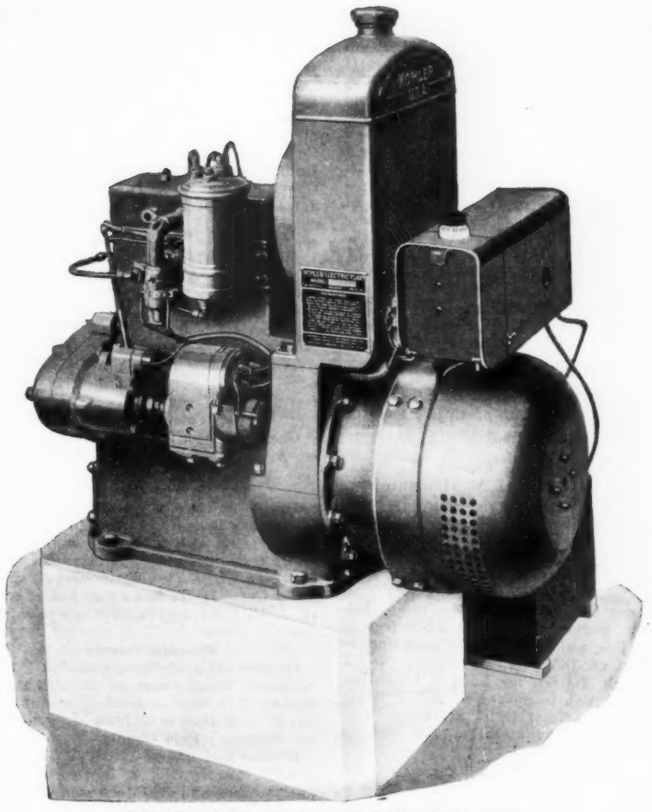
SOUTHWEST WILDCATS

(Continued from Page 49)

tion. M. O. Rayor is down 900 feet in a well a mile north of Joe Bruner's discovery well and quite a number of deals are being got together to wildcat in that territory.

The Corpus Christi country will probably get a deep test. National Oil Co. reached contract depth at 2,500 feet on No. 1 Sullivan, in San Patricio County, the only test going down at this time in this part of Texas on a seismograph location. It is below 3,000 feet now and has had 700 feet of gumbo and shale with no sand breaks. For the present it is going to keep drilling and will continue as long as the company deems it advisable.

Thraves' No. 1 Wilson in Val Verde



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County, at the center of the north line of Section 115 G.C.&S.F. survey, is down 1,125 feet and is 25 feet into the Pennsylvanian and waiting on casing. It shows a little oil and gas when bailed. It topped the Trinity at 1,055 feet and the Pennsylvanian at 1,100, and the surface elevation is 2,115 feet. The well stood idle for a long time at 905 feet and lately resumed drilling. That part of the county, while possibly a little too far south to be classed as on the rim of the Permian basin, is nevertheless close to the rim and it is the chance to get the Pennsylvanian that has attracted operators to that part of the country as well as to Edwards, Real, Sutton and Sleicher counties. The Pennsylvanian at 1,125 feet is both interesting and important and especially with a showing of oil and gas.

Duval County

National Oil Co 's No. 1 Ball, Survey 16, located 450 feet to north line and 150 feet to east line, is standing at 2,212 feet.

Jim Hogg County

W. C. Berg's No. 1 N. Hinnant, Survey 19, Block 9, located 250 feet to west line and 150 feet to south line, is drilling at 100 feet. Holden and others' No. 3 Jones, Share 27, Block 136, is standing at 2,568 feet.

Hidalgo County

Queen City Oil & Gas Co.'s No. 1-A Adams, Survey 82, located 2,640 feet to north line and 1,320 feet to east line, is drilling at 135 feet in gumbo; No. 2 American Rio Grande Land & Irrigation Co. is location in Survey 82, Lot 1. Hargil Oil Co.'s No. 1 D. F. Stevenson, Las Mestines tract, is location 150 feet to south and east lines.

LaSalle County

Frank McCarty's No. 1 R. C. Sutton, Survey 36, located 250 feet to east lines and 150 feet to west line, has been completed as a water well at around 600 feet. Southwestern Petroleum Co's No. 1 H. Beckwith, Survey 19, is drilling at 700 feet.

Starr County

The Texas Company's No. 1 M. Guerra, Porcion 68, Block 91, located 1,000 feet to east line and 150 feet to south line, is drilling at 3,070 feet. J. V. McAleese and others' No. 1 Hicks & Hicks Perdernal grant, is standing at 320 feet to move on rotary. Kusch Exploration Co.'s No. 1 Frank Doyno and others, Porcion 75, Block 13, is drilling at 915 feet.

Atascosa County

F. H. Eckert and associates' No. 1 Blake, Survey 185, located 2,450 feet to west line and 150 feet to south line, is in hard sand rock 18 inches at 460 feet.

Bastrop County

Noack & Laning's No. 1 Roemer, Isaac Casner League, is shut down at 1,935 feet. J. F. Miller Co.'s No. 1 Ed Jones, 2 miles northeast of Cedar Creek, is drilling at 150 feet. Gypsy Producing Co.'s No. 1 Pirtchett, 7 miles east of Bastrop, is drilling. Rundus & Landua's No. 1 Frank Rundus, Bartens Creek and Smithville-Cister road, is in rock at 723 feet with a shaley sand at 128-148 feet that seemed to carry a little water, and from 600 to 723 feet formation is greenish.

Bexar County

Allen Burnam's No. 1 Ward, A. A. Gardiner Survey, 1,200 feet to east line and 325 feet to south line, is drilling at 1,100 feet. C. J. LeCompte's No. 2 Diaz, Survey 32, Block 4,283, located 450 feet north of No. 1, is standing at 72 feet on rock. F. H. Meyer's No. 1 B. Biering, W. Alexander Survey No. 416, located 450 feet to south and east lines, is shut down at 140 feet to make new location.

Bee County

Hurador Oil Co.'s No. 1 G. A. Ray, northeast of Pettus, is standing at 2,675 feet. Red Ant Oil & Gas Co.'s No. 1 Perry & Chestnut, B. Q. Hadley Survey, 450 feet to east line and 1,600 feet to south line of farm, is standing at 1,375 feet.

Blanco County

C. W. Bates' No. 1 Herman Massey, Henry Manton Survey, 920 feet to north line and 660 feet to east line of survey, is fishing at 214 feet. Robert Rodson's No. 1 Glasscock, Survey 50, located 150 feet to CEL, is in hard rock at 454 feet.

Caldwell County

R. M. Bruner and W. H. Ballard's No. 1 Davis, located 4 miles northeast of discovery well of the Bruner Field, is rigged up and waiting on water. Detex Oil Co.'s No. 1 Hardeman, 4 miles north of Luling, is shut down at 3,075 feet. Charles Hertz' No. 1 P. E. McMahon, James Pinchbeck Survey, has been spudded in. H. C. Ratcliff's No. 1 Brisco, J. Hindes Survey, is shut down. Luling Oil & Gas Co.'s No. 2 Carter (formerly Sutton & Smith's No. 2 Carter) Gerren Hindes Survey, 900 feet east of No. 1 and 4 miles northeast of Luling, has been spudded in. Louis P. Schawe's No. 1 Ted Schawe, Thomas Maxwell Survey, 6,111 feet to southeast lines and 6,986 feet to northeast lines, is at 769 feet in top of the chalk.

Comal County

George Kruger's No. 1 Witmore Decker, A. Gayetan Survey No. 194, is location in southeast corner.

DeWitt County

Durbin Oil Co.'s No. 1 Gohmert, G. W. Brooks League, 175 feet to north line and 300 feet to east line, is standing at 3,013 feet. Empire Southern Oil Co.'s No. 2 Smith, Survey 3, is shut down at 3,150 feet. H. T. Roe's No. 1 Lienhard, D. J. Bibb Survey, is shut down at 959 feet.

Dimmitt County

Humble Oil & Refining Co.'s No. 2 City National Bank, Survey 25, L.I.M.&C. Survey, 150 feet to north line and 850 feet to west line, is drilling at 1,600 feet.

Frio County

Karnes and others' No. 1 J. J. Little, B.S.&F. Survey No. 2, located 340 feet to east line and 300 feet south of Medina-Frio County lines, is shut down at 607 feet. Blue Ribbon Oil & Gas Co.'s No. 1 Edwards, Hooper & Wade Survey, 920 feet to CNL, at 2,470 feet attempted to make test and is now standing. P. A. Neilan's No. 2 Blackaller, James Gouley Survey, is cleaning out at 2,975½ feet and showing oil and some gas

Goliad County

C. W. Simpson's No. 1 Ideus, W. H. Pendleton Survey, 156 feet to north line and 540 feet to west lines, is standing at 2,323 feet.

Gonzales County

The Texas Company's No. 1 Denman, A. Zumwalt Survey, 100 feet to south and west lines, is drilling at 980 feet in hard blue shale. L. P. Unkel's No. 4 W. W. Johnson, C. H. Jaeger Survey, is nearing 601 feet where oil showing was found in another well.

Guadalupe County

J. M. Rentz' No. 1 Siligman & Freeman, Gustavus Chotwell Survey, 1,100 feet to southwest lines of farm and survey and 1,130 feet to southeast lines of farm, is standing at 690 feet. Wolf Creek Oil Co.'s No. 1 Mrs. L. Hocke, Harriett Cottle Survey, is location 150 feet to north line and west line of Mrs. L. Hocke 54-acre tract.

Hays County

Estess-Moore & King's No. 1 C. N. Sledge, Hunton & Jones Survey, 1 mile from Kyle, is drilling at 350 feet. J. E. Rodgers' No. 1 E. Hohenburg, 2½ miles east of San Marcos, is shut down at 2,189 feet.

Jackson County

J. B. Douglas' No. 1 C. O. Lowrance, 12 miles northwest of Edna, is drilling water well.

Jim Wells County

Cushing Oil & Gas Co.'s No. 1 M. Perez, La Tinaja Survey, 600 feet to north and east lines of survey and 6 miles west of Alice, is drilling at 1,350 feet in dark blue shale.

Karnes County

Reynosa Oil Corp.'s No. 2 Butler, Block 43, located 1,000 feet south of No. 1, is standing at 2,007 feet.

Kerr County

Walker-Van Duyn's No. 1 Barfield, B. B. Peck Survey, 4,700 feet to north line and 450 feet to east line, is shut down at 2,100 feet.

Live Oak County

War. Wood Hunt's No. 1 McNeil, Jane Curry Survey, 4,000 feet to NE cor. and 3,000 feet to NWL, is shut down at 2,505 feet.

McCina County

Yantis, Carl and others' No. 1 Tom Neumann, J. Haldy Survey No. 41, located 860 feet to north line and 431 feet to west line of survey, is drilling at 900 feet. Medina Oil Co.'s No. 1 Taylor, Survey 135, is standing at 1,243 feet. California-Medina's No. 1 Rothe, Survey 1,012, is standing at 3,275 feet.

Maverick County

Ryan Consolidated Petroleum Co 's No. 1 Indio, Survey 14, center, is preparing to pull casing. Ryeade Oil Corp.'s No. 1 Chittim, Section 129, Block 7, is standing at 4,295 feet; No. 2 Chittim, Section 158, Block 7, is drilling at 5,335 feet and showing oil and gas.

McMullen County

Houston Gulf Gas Co.'s No. 6 Jacob is location.

Nueces County

Alamo Drilling & Leasing Co.'s No 1 Gallagher, Survey 158, located 1,215 feet to north line and 650 feet to east line, is standing at 150 feet. Keith & Kayne's No. 1 William Gingrich, J. Kubler Survey, is location 200 feet to south and east lines.

San Patricio County

R. D. Kelly's No. 1 C. C. Smith, 2 miles southeast of Odem, has spudded in. National Oil Co.'s No. 1 J. E. Sullivan, J. C. McMullen Survey, 500 feet to SW cor., is drilling at 2,910 feet with contract depth passed at 2,500 feet, and will probably drill considerably deeper; now in shale and gumbo and looking for sand break. George B. Pickett's No 1 Whitworth, NW NW Section 60, at 3,100 feet, has little sand but dry and is now standing, though test may be deepened; No. 1 Garrett is standing at 3,030 feet. John Sigmund's No. 10 Robinson to deepen from 1,900 feet.

Travis County

T. P. Garrett's No. 1 Paul Rowe, R. Hornsby Survey, 900 feet to north and east lines, is standing at 1,025 feet. W. J. Hill's No. 3 fee is standing at 400 feet.

Uvalde County

Pure Oil Co.'s No. 1 J. D. Smythe, Survey 687, located 740 feet to north line and 146 feet to SE cor. of Survey 20, has casing stuck off bottom at 2,378 feet.

Val Verde County

Valvert Oil Corp.'s No. 1 Bassett, C NE Section 47, Block Y, is moving on. East Del Rio Oil Co.'s No. 1 Russell, Section 183, is shut down at 3,325 feet. Independent Operators' No. 1 Whitehead, Section 30, Block 4, is standing at 3,900 feet. O. O. Owens and others' No. Mills, Section 128, is standing at 4,210 feet. W. V. Traves' No. 1 Wilson, Section 115, Block E, topped Trinity at 1,055 feet and Pennsylvanian at 1,100 feet, with the Trinity dry and the Pennsylvanian showing some gas and oil and is now at 1,125 feet waiting on casing.

CANADIAN FIELDS

(Continued from Page 56)

cemented in the top of the Madison Limestone at 4,303 feet, having entered that formation at 4,300 feet. Royalite's No. 9, LSD 6, Section 13-20-3w5, is at 4,095 feet and drilling. Royalite's No. 11, LSD 10, Section 12-20-3w5, is drilling at 2,470 feet. Royalite's No. 15, LSD 1, Section 12-20-3w5, is at 1,827 feet and drilling. Royalite's No. 16, LSD 2, same section, is drilling at 1,810 feet. These two tests spudded in almost simultaneously, and are keeping exceedingly close to one another.

Dalhousie Oil Co.'s No. 6, LSD 10, Section 13-20-3w5, is in the top of the lime and standing cemented at 4,903 feet. Foothills Oil & Gas Co.'s No. 2, LSD 8, Section 1-20-3w5, is in production at 2,842 feet and removing tubing. Foothills' No. 1, SW Section 26-20-3w5, is at 3,636 feet and running 8¼-inch casing.

Home Oil Co.'s No. 2, LSD 14, Section 20-19-2w5, is at 4,768 feet and drilling. Home's No. 3, same LSD, is drilling at 720 feet.

Oil in Deep Test

Calmont Oils, LSD 2, Section 1-20-3w5, has definitely got the deep lime at the greatest depth at which that horizon has yet been encountered in the Turner Valley Field. At 5,476 feet the test is 13 feet in the lime, and is setting the 6¼-inch casing before drilling into production. The test is expected to start drilling in, after the cement sets, toward the end of next week. The Calmont got oil at the top of the lime, where McLeod's No. 2 and Illinois-Alberta's No. 1, farther up the structure, encountered gas; which is taken to bear out the theory that wells further down the Turner Valley structure will get oil in place of gas, and heavier crude in place of crude naphtha. The hole is reported in good shape for further drilling and no difficulty is anticipated in finishing the well. There is considerable light green crude, testing 50 gravity, in the bottom of the hole; but no capacity test of the show in the top of the lime has been made. The main producing horizon is expected around 5,560 feet, or about 80 feet further in the lime. A separator and control head are being brought in, and 1,500 bbls. of storage provided.

McLeod Oil Co.'s No. 3, LSD 16, Section 1-20-3w5, which is being continued to the deep lime, is at 3,300 feet and running 8¼-inch casing to the bottom of the hole. There is between 1,200 and 1,300 feet of light crude in the hole, some of it apparently from the newly drilled portion; as soon as casing is run a swabbing test will be made. McLeod's No. 4, same LSD, is reported drilling at 2,045 feet and carrying the 12½-inch casing down behind the tools.

Illinois-Alberta Oils' No. 2, LSD 14, Section 12-20-3w5, is reported at 2,040 feet and drilling. Illinois-Alberta's No. 1 is maintaining its previous crude naphtha production from the deep lime.

Vulcan Well Frozen

Vulcan Oils' No. 1, LSD 11, Section 13-20-3w5, which produced 2,000 bbls. of crude naphtha in April, is again frozen with production entirely cut off. Vulcan's No. 2, same LSD, is at 4,855 feet with a string of tools in the hole. Spooner Oils' No. 1, LSD 12, Section 13-20-3w5, is in production at 4,978 feet and making a daily average of about 30 bbls. of 66 gravity crude naphtha. The Spooner-Vulcan interests have ordered a diamond drill outfit which should be on the ground about the end of May, when the three wells will be all drilled deeper, commencing with Spooner's No. 1 and following with Vulcan's No. 1. If the tools in Vulcan's No. 1 cannot be fished out, it is planned to drill past them, which can be done by diverting the drill stem about 30 feet above the bottom of the 5,004-foot hole. The same plan may be followed with Vulcan's No. 2, which has a lost string at 4,855 feet.

Advance Oil Co.'s No. 5, LSD 16, Section 19-19-2w5, is reported drilling around 1,000 feet, after encountering a fair show of oil and gas at 595 feet.

Okalta Oils' No. 2, LSD 8, Section 1-20-3w5, is at 2,800 feet and cleaning old iron out of the bottom of the hole before drilling deeper. Okalta's No. 1, LSD 1, same section, is at 4,640 feet on the top of the lime and waiting for a diamond drill outfit.

Mayland Oils, LSD 10, Section 17-19-2w5, is drilling below 800 feet.

Seneca Oils, LSD 1, Section 34-20-3w5, has resumed drilling at 4,210 feet after a few days shut down for repairs to a break on their band wheel.

Freeman-Lundy Syndicate, LSD 10, Section 1-20-3w5, has commenced work on derrick. Model Oils, LSD 8, Section 22-20-3w5, has finished its camp and commenced work on derrick.

Regent Oil Co., LSD 16, Section 1-20-2w5, is at 2,245 feet and drilling.

The Appeal Court of Alberta has set aside the appeal of Frank Starley to the Privy Council, in his litigation against the New McDougall Segur Oil Co. Starley brought suit on April 8, 1927, claiming mineral rights on the lands of the New McDougall-Segur Oil Co. The suit failed in the trial and appellate courts, and efforts are now being made by the plaintiff to carry the litigation to the Privy Council, the court of last resort.

The principle involved affected a number of oil leases in the Turner Valley Field.

William Phillips, minister to Canada for the United States Government, recently visited the Turner Valley Field, and expressed h mself as very much impressed by the field, and particularly by the new Royalite's No. 8 producer. Mr. Phillips was shown through the field by J. H. McLeod, western production manager of Imperial Oil, Ltd.

D. B. Hanna, president of the Kirkland Lake Gold Mining Co. of Toronto and at one time manager of the former Canadian Northern Railroad, is visiting the Turner Valley F eld, where the Kirkland Lake company is planning to make some investments. He is accompanied by R. G. Thompson and W. A. Walker, Kirkland Lake directors.

Moose Mountain

In the Moose Mountain Field, Signal Hill Oil Co.'s No. 2, LSD 9, Section 34-23-5w5, is at 1,975 feet and underreaming, after cementing casing. Roads to this area have been practically impassable this spring, but are now improving which is expected to facilitate new development work. Maccabee Creek Oils, Lt. has a derrick up in the Moose Mountain area. Elbow Oils, Ltd. of Calgary will drill a test this spring in the Moose Mounta'n Field south of Bragg Creek; no definite location has yet been made. The annual meeting of Elbow Oils, Ltd. at Calgary recently elected the following directors: President, John C. Morris, London, England; vice president, A. Carefoot, Vancouver, British Columbia; managing director, L. A. Snyder, Calgary; directors, John B. Risk and Herbert Morris, Jr., London; W. C. Scott and J. C. Nelson, Calgary. The London directors represent Br.tish capital that is taking an extensive interest in the company's operations.

In the Morley Indian Reserve, Wabash Oils is reported drilling around 1,150 feet, with a small gas production. It is reported that a Calgary syndicate is arranging to take over and complete the unfinished test of Reserve O.ls, Ltd. which has been shut down for some time at 1,877 feet. The test was carried to this depth with a diamond drill, and had to discontinue operations in 1926 owing to lack of funds.

In the north end of the Turner Valley Field, Stockmen Oils' No. 2, LSD 7, Section 27-20-3w5, is reported drilling at 400 feet. The 36-inch stove pipe casing was set at 80 feet and the 20-inch run down 100 feet.

In the Sinclair-Highwood area, southern foothills, Imperial Oil, Ltd. Highwood No. 1, LSD 3, Section 36-18-3w5, is straightening hole at 3,624 feet. Highwood Syndicate is rigging up for a cable-tool test in LSD 3, Section 28-18-3w5; th's location is on the Sinclair structure, 2½ miles west of the Highwood-Imperial No. 1.

In the Aldersyde district south of Calgary, Ranchmen's Gas & Oil Co., LSD 16, Section 13-20-29w4, is being cleaned out preparatory to resuming drilling at 2,500 feet. At this depth the test is a considerable distance in the Kootenay formation. The location is on the Campbell Dome, w'th the probable production level estimated at 2,800 feet. A gas and oil horizon with small showing was met at 1,900 feet, and the next production will likely be in the Home sand on top of the Fernie shales. The Ranchmen's Gas & Oil Co. holds perpetual rights on 3,000 acres in the Aldersyde district.

Wilson's Oil Exchange of Calgary has taken over oil acreage covering Section 29-20-1w5 from I. M'ron of Carbon, Alberta, and is arranging for development work.

In De Winton district, south of Calgary, Anglesey-Lakeview's No. 1, LSD 1, Section 22-21-1w5, is standing cemented at 2,713 feet. The Marquis of Anglesey, who is financing the test, has arrived in Canada from the United Kingdom to inspect his Canadian properties.

In the Chin Coulee area, southern Alberta, Lethalta Oils, Ltd. of Lethbridge, Alberta, has a derrick up and considerable equipment on the ground.

On the Montana side, the Coast Loggers Oil Syndicate of Vancouver, British Columbia, represented by the Kevin-Sunburst Holding Corp. of Shelby, are drilling a test in E half SE Section 4-34-3w, southwest of Kevin, immediately northeast of the Majestic Oil Co. gusher. The syndicate is planning to drill several tests this year on Montana acreage.

Wainwright Field

In the Wainwright Field, east central Alberta, Fred H. Hutton, representing United States interests, has filed on some 16,000 acres in the Birch Lake area. Duluth interests have some 35,000 acres in the same area. It is reported that two United States syndicates will drill deep tests on the Birch Lake holdings this summer, one of these tests to start early in June.

In the Wainwright Field, some new activity is reported. The J. O. Absher synd'cate of Edmonton has leased British Petroleum' No. 3-B producer in LSD 4, Section 29-45-6w4, and is pumping a daily production of about 40 bbls. of heavy crude. The Absher syndicate is also operating the Edmonton Wainwright Oils' No. 1, LSD 4, same section, which is making approximately the same production. These are the only producing wells reported active in the Wainwright Field. The Battle Syndicate of Calgary is reported to have taken over British Petroleums' No. 4, Section 30-45-6w4, and will deepen it to the lower producing sands on a royalty basis. Near the town of Wainwright, Wainwells Oils, Ltd. will deepen and finish the old Interior Oil Co. test in Section 36-44-7w4, now shut down at 2,100 feet. Fabyan Petroleums, LSD 8, Section 24-45-8w4, is getting the plant in shape to resume drilling at 1,100 feet.

Ribstone-Blackfoot

On the Ribstone-Blackfoot structure, east of the Wainwright Field, Ribstone Oils' No. 1, LSD 1, Section 1-46-1w4, is reported drilling at 1,979 feet after running 6¼-inch casing. The water has been successfully shut off. London-Ribstone Petroleums, Ltd., LSD 14, Section 10-43-3w4, is shut down at 2,000 feet. The company is reported preparing for more extensive operations. British geologists have been looking over the structure, and extensive development work is in prospect. No. 1 well encountered a fair show of gas around 1,200 feet. The location is southwest of Imperial-Ribstone's No. 1, Section 5-45-1w4, which was abandoned at 3,489 feet, after encounter'ng around the 1,900-foot horizon an oil sand which failed to develop commercial production.

In the Sage Creek district, British Columbia, the British Columbia Oil & Coal Co.'s No. 2 test is reported drilling at 1,100 feet.

In Saskatchewan, the Riverhurst Oil & Gas Co. is preparing to resume work in the Riverhurst district. The company has two tests in Section 33-22-7w3; No. 1 got gas production at 528 feet and No. 2 is shut down at 513 feet. New tools and equipment are being secured to deepen No. 2, which has some gas production. No. 2 is reported to have an open flow of 500,000 feet a day. The gas may be utilized to supply Riverhurst.

Ontario Fields

In the Ontario fields, the Oil Springs Oil & Gas Co. drilling in the Oil Springs Field has developed a shallow gas production estimated at 150,000 feet a day. The gas will be used to supply Oil Springs village.

In the Dover Field, Kent County, Ontario, the Ajax Oil & Gas Co. is understood to have arranged for the marketing of its product'on from No. 1 well to the Union Natural Gas Co. No. 1 well got a small production in the Trenton limestone at 3,225 feet, estimated around 200,000 feet a day. The outfit has been moved a short distance east to No. 2 location where another Trenton test will be spudded in this month.

The Pike Lake Oil & Gas Development & Exploration Co. is planning to test a structure in the Saskatoon area. The company has more than 5,000 acres blocked out and has location No. 1 test in NEW Section 17-34-6w3. Location was made by Geologist E. B. Emrick of Montana. The test will be drilled to the Devonian limestone, production being looked for in that horizon at approximately 3,350 feet depth. If gas is secured in commercial quantit.es, it may be marketed to Saskatoon.

Simpson Oil Co., Section 9-29-25w2, is getting in shape to resume drilling on No. 1 test. The test was shut down last fall around 1,400 feet, after getting a small show of high grade paraffin base oil at 1,340 feet and a fair gas production at 1,360 feet. A rotary outfit was used. The location is a m le from Simpson, Saskatchewan, approximately 90 miles north of Regina. The company was organized by Simpson men who have financed operations so far; an additional issue of 200,000 shares of treasury stock is being made to finance further work.

NORTH LA.-ARK.

(Continued from Page 53)

1,881 feet on No. 1 Whitehouse, Section 35-16-12.

Caddo Parish

Greenwood—Belchic & Laskey's No. 4 R. T. Sharp, Section 10-18-16, is shut down for orders at 2,480 feet.

Oil City—Shreveport Oil Corp. No. 3 Muslow, Section 32-21-15, tested dry at 2,217 feet and is arranging to go deeper.

Pine Island—Dixie Oil Co. was unable to loosen drill stem stuck at 4,382 feet in No. 92 Dillon, Section 13-21-15, so backed off most of the string and is milling on the stuck joints. Magnolia Petroleum Co. is drilling lime at 3,025 feet in No. 26 D. H. Raines, Section 22-21-15, completed Sept. 22 last year flowing 100 bbls. of oil from 2,845 feet, which they are deepening to the 3,900-foot stuff. No. 22 Robertshaw, Section 23-21-15, cored red shale at 4,144 feet.

Monroe District

Morehouse Parish—Southern Carbon Co. cemented 800 feet of 8-inch casing in No. 1 Davis, Section 21-20-4.

Ouachita Parish—Jordan Drilling Co.'s No. 1 Coll, Section 50-18-4, is drilling at 1,850 feet. Montgomery and others are arranging to test No. 1 Johnson, Section 30-19-4, at 2,208 feet. Palmer Corp. found 6-inch casing set at 2,132 feet in No. 4 Kate Cole, Section 26-20-4, was leaky and is setting a string of 4½-inch at 2,134 feet to cut off the flow. Southern Carbon Co. has begun drilling No. 9 Fairbanks, Section 34-20-4, and Stovall Drilling Co. has location 350 feet south and 100 west NE cor. Section 31-19-4, for No. 1 Johnson.

Union Parish—Ruston Drilling Co. has location 660 feet south and 2,080 east NW cor. Section 24-20-3, for No. 1 Betty Neal. United Carbon Co. is drilling No. 1 Trimble, Section 19-20-4, at 1,325 feet.

Richland Parish

Dixie Oil Co. making a deep test of No. 1 McCoy, Section 29-16-6, after testing dry at 2,454 feet and salt water with 1,000,000 feet of gas at 2,482 feet, is drilling at 2,650 feet. W. C. Feazel cemented 180 feet of 12-inch surface casing on No. 1 Pardue, Section 32-16-6, and is drilling below 200 feet. Feazel & Hemler's No. 1 Pardue, Section 21-16-6, is drilling at 1,700 feet. Gulf Refining Co. is in sticky lime at 3,540 feet on No. 1 Rhymes, Section 28 17-6. Moody & Seagraves' No. 1-B Sartor, Section 9-16-6, is drilling shale at 2,412 feet with 6-inch cemented at 2,293 feet. Oliver & Masters' No. 1 Morrison, Section 2-15-5, is drilling at 1,950 feet. Southern Carbon Co.'s No. 1 D. R. Sartor, Section 9-16-6, is drilling at 2,445 feet.

Sabine Parish

Magnolia Petroleum Co. is bailing 8⅛-inch casing cemented at 3,150 feet on No. 1-B Hall, Section 33-10-12.

Webster Parish

Cotton Valley—Dixie Oil Co. is drilling No. 1 Cox, Section 15-21-10, at 2,490 feet. Humble Oil & Refining Co.'s No. 3 R. R. Cox, Section 22-21-10, is nearing surface casing depth; No. 6 Davis, Section 14-21-10, is drilling shale and lime at 3,055 feet, and No. 2 Webb in the same section is setting 6⅝-inch casing at 4,270 feet. Louisiana Oil Refining Co.'s No. 5 Crichton, Section 21-21-10, is drilling shale at 2,873 feet; No. 1 Davis, Section 23-21-10, is in lime at 4,681 feet, and No. 4 Lindsay, Section 22-21-10, is in lime at 3,515 feet. Magnolia Petroleum Co. No. 2 Coyle, Section 21-21-10, is waiting for 16-inch surface casing to be set at 300 feet; No. 3 Aarnes-Cox, Section 22-21-10, is drilling at 2,665 feet; No. 1 D. G. Cox, Section 22-21 10, is plugged back to 4,700 feet, total depth 4,752 feet, and waiting for cement to set. Ohio Oil Co.'s No. 39 Bodcaw is drilling at 2,621 feet, No. 40 at 2,415 feet and No. 41 at 2,235 feet, all in Section 15-21-10. Palmer Corp. cemented 8-inch casing in No. 1 Mixon, Section 22-21-10, at 3,524 feet. Woodley Petroleum Co.'s No. 1 Lewis, Section 15-21-10, is in hard lime at 3,030 feet.

Sarepta and Shongaloo—Magnolia Petroleum Co. is deepening No. 2 J. R. Baker, Section 35-23-11, completed June 12, 1922, as a 35,000 000-foot gasser at 2,673 feet, and is drilling at 2,930 feet; No. 1 Camp, Section 36-23-10, is coring at 3,114 feet; No. 1 Leona Sexton, Section 32-23-9, is in gumbo at 2,080 feet and No. 1 Mary Wise, Section 30 23-9, has cemented 313 feet of 13⅜-inch surface casing. Harry Morris, No. 1 Lewis, Section 15-23-9, is drilling at 900 feet. Bruce Richardson has made location 660 feet north and west SE cor. SW Section 30-23-9, for No. 1 Mayfield.

ARKANSAS

Ouachita County

Smackover—Ohio Oil Co.'s No. 7 Cramer, Section 22-15-16, was dry at 3,424 and 3,429 feet and is drilling at 3,476 feet. Skelly Oil Co. is drilling No. 10 Umstead, Section 33-15-15, at 1,962 feet.

Union County

Champagnolle—Arkansas Drilling Co. No. 1 Carroll, Section 1-17-14, is drilling at 2,228 feet. Arkansas Natural Gas Corp.'s No. 1 Felsenthal is a derrick 330 feet north and west SE cor. NW NW, Section 11-17-14. O. W. Estes' No. 1 Rowland, Section 14-17-14, is drilling at 2,938 feet. H. L. Hunt is drilling No. 1 J. D. Gregory, Section 10-17 14, at 1,910 feet with 10-inch surface casing set at 157 feet. E. C. Johnson, trustee, has rig up for No. 1 E. F. Gregory 150 feet north and west SE cor. NW SW, Section 10-17-14. Lion Oil Refining Co. tested 1,000 bbls. salt water and 100 bbls. oil in 8 feet of sand 3,201-9 feet, cored two more feet of sand and set a short string of 5⅜-inch casing at 3,210 feet to cut off the water; No. 2 is a rig and No. 3 is drilling at 514 feet with 10-inch surface string set at 225 feet.

Magna Producing Co. set 149 feet of 10-inch surface casing on No. 2 Dumas, Section 11-17-14, and is drilling at 2,455 feet; No. 3 is drilling at 2,131 feet with 10-inch set at 152 feet, No. 4 has 10-inch cemented at 108 feet and No. 5 is a derrick 330 feet south and west NE cor. SW NW Section 11-17-14; No. 2 Rowland, Section 14-17-14, a 120 bbl. producer at 2,974 feet April 27, cored white chalky lime from 3,185-95 feet and is drilling with no sand having been picked up yet below the original production. No. 1-B Rowland in the same section is a rig. Magnolia Petroleum Co. began drilling No. 3 Carroll in Section 1-17-14 May 5, set 237 feet of 13⅜-inch surface casing and is drilling below 1,100 feet; No. 1 G Felsenthal is a location 330 feet north and east SW cor. NE NW Section 11-17-14. C. E. Murdock is drilling No. 2 Gregory, Section 10-17-14, at 2,731 feet.

Ohio Oil Co. has 10-inch surface casing cemented at 416 feet on No. 1 T. E. Adams, Section 11-17-14, and at 186 feet on No. 1 Lochner in Section 11-17-14. No. 2 Lochner is a location 330 feet south and east NW cor. SE NW Section 11 17-14. No. 1 W. S. Rowland in Section 15-17-14 is drilling at 620 feet with 10-inch surface string set at 185 feet, and No. 1 Smith, in Section 1-17-14, is drilling at 1,527 feet with 10-inch cemented at 185 feet.

Pure Oil Co. is drilling No. 2 E. F. Gregory, Section 11-17-14, at 2,340 feet, No. 3 at 2,795 feet, No. 4 at 2,500 feet, and has rigs up for No. 5 and No. 6, the latter a new location 150 feet south and west NE cor. W half SW SW of the same section. No. 1 J. M. Gregory, in Section 11, has set 187 feet of 10-inch

surface casing, and No. 1 J. M. Gregory, in Section 15-17-14, is drilling at 450 feet with 10-inch set at 193 feet. A. Rovenger's No. 1 Perdue, Section 10-17-14, is drilling at 1,370 feet. Rushing and others cemented 6⅝-inch casing at 3,196 feet in No. 2 E. F. Gregory, Section 11-17-14, to test 16 feet of sand, total depth 3,212 feet, and have rig up for No. 3 180 feet north and 1,620 west SE cor. W half NW SW, and derrick for No. 4 150 feet south and 660 north SE cor W half NW SW of the same section. Timberlake and others' No. 1 Dumas, Section 11-17-14, is drilling at 2,720 feet.

Smackover—Lion Oil Refining Co. has cemented 6⅝-inch casing at 2,336 feet on No. 8 Hays, Section 4-16-15; No. 7-C Murphy, Section 8-16-15, is waiting on standard rig with 1,000 feet of fluid, 80 per cent salt water standing in the hole from 2 feet of sand at 2,466-68 feet, and No. 3-H Murphy, Section 9-16-15, is drilling at 2,900 feet. Rice and others set 137 feet of 10-inch casing in No. 1 Heinman & Myers, Section 23-16-16, and are drilling at 870 feet. F. B. Wood trustee's No. 2 Spahr, Section 34-15-16, is waiting on standard rig with 400 feet of oil in the hole from 30 feet of broken sand, total depth 2,056 feet.

EAST TEXAS

Harrison County

Magnolia Petroleum Co.'s No. 2 A. G. Vincent, R. W. Bedford survey, is reaming to bottom, total depth 2,808 feet.

Panola County

Beckman & Freeman have 10-inch casing set at 100 feet on No. 2 S. M. Burns in the Alex Birdsong survey. S. H. Gardner and others are drilling 6-inch plug at 2,265 feet on No. 3 Cavin, B. C. Jordan survey. Magnolia Petroleum Co.'s No. 1 T. C. Adams in the J. M. Birdsong survey is reaming to bottom, total depth 2,631 feet; No. 1 Martha Richardson, Benson Lovell survey, is arranging for a drill steam test at 1,990 feet; No. 4 G. C. Tiller in the Jane Thorp survey has rig up to drill, and No. 1 S. R. Vance J. Womack survey is coring at 1,990 feet. The Texas Company's No. 4 Brumble, in the J. Womack survey, set 101 feet of 10-inch surface casing and 6¼-inch at 974 feet.

LA.-ARK. WILDCATS

(Continued from Page 53)

three wells in the northeast part of Smackover proven area to 3,200 feet and below which yielded production but on a scale that was at that time, due to recent reductions in crude prices, not profitable. Two other wildcats are under way west of the new deep test, Lion Oil Refining Co. having rig up for No. 1 Kelley, in SE cor. Section 9-17-14, and E. C. Johnson, trustee, having rig up for No. 1 E. F. Gregory, in SE cor. NW SW Section 10-17-14, both about a mile from production. The two between Champagnolle and Smackover are Ouachita Natural Gas Co.'s No. 1 Perdue, drilling at 250 feet in NW cor. NW NW Section 33-16-14, 3 miles west of production in the original Champagnolle Pool, and Rhodes and others' No. 1 Amason, a derrick in SW cor. NE SE Section 21-16-14, about 5 miles northwest of the Champagnolle discovery well. Root Refineries, Inc., has a well, No. 1 Jerry, under way in NE cor. SE SW Section 21-17-14, 2 miles southwest of production, and E. M. Jones is drilling in Section 22-17-14, 1½ miles due south.

Seek Deeper Production

Discovery of oil in commercial quantities below the red beds of south Arkansas, as has been done in Champagnolle, is expected to lead to prospecting for deeper production throughout the territory, particularly in Smackover and El Dorado districts, toward which some work has already been done during the past two years. Indications of production below this formation was found first in a well drilled during 1926-27 in Section 7-18-13 by the Garrett-Modisette Drilling Co. of El Dorado which claim it could have made a 10-bbl. well and to have passed through a series of sands between 3,000 and 4,000 feet. E. M. Jones' No. 3 Crain in NW cor. NE SE Section 2-17-14, in the Champagnolle district, also was drilled through the red beds to a total depth of 4,014 feet where it was abandoned as a dry hole after bailing oil and salt water from 5 feet of sand at 3,076 feet and salt water at 3,275 feet.

The formation was also found in the deep well drilled by Jim Stocks in the El Dorado East Field in 1925 in Township 18-18, along the Union-Columbia County line by the Trinity Oil Co. which preceded discovery of the original El Dorado Pool by only a few months; by Transcontinental Oil Co. at Three Creeks in Township 19-17; at Felsenthal in Township 19-10; in Township 16-15 just north of Norphlet in the Smackover Field and in the south end of the El Dorado South Field in Township 18-15.

C. F. Noble and others have blocked 600 acres in Section 36-16-15 and 160 acres in Section 31-16-15, and are drilling 200 feet east of the center of Section 36 in the center of the block. A mile south of production in Smackover, they plan to go 3,500 feet before abandoning the project and may go deeper. About all that is required for a general revival of drilling in south Arkansas in search of the new production below the red beds, once regarded as marking the "dead line" below which it was useless to expect aything but now the marker for the new stuff, is a continued return to more of a balance between supply and demand of crude oil and an upward revision of prices. Should 3,500-foot holes be made worth while considerable development in new and old territory may be expected.

Including the Palmer well wildcat territory in the Shreveport division had five completions, one a 5-bbl. producer, the Palmer gasser and three failures. Leonard Petroleum Co. abandoned No. 1 Knott in Section 32-11-8, Catahoula Parish, at 4,765 feet as a salt water hole. It was reported to have had a good show of gas about a month ago at around 3,782 feet and set 6-inch for a test that failed to make good on the show.

American Controlled Oil Co., after working with No. 1 Lanier in Section 7-11-11 Desoto Parish, since last January for a second completion, finally put it on the pump making 5 bbls. oil from 2,768 feet. It had been deepened from 2,735 feet where it was a 40-bbl. pumper; No. 2 Lanier in Section 5-11-11, tested dry at 2,800 feet and is abandoned. Both wells were drilled on the strength of a much better producer completed a year ago by Hooser Oil & Gas Co. to which both were offsets. Lenz and others abandoned their third effort to find production in Miller County, east of Texarkana, Ar., No. 3 Dale being a dry hole at 3,150 feet.

NORTH LOUISIANA

Bienville Parish

Humble Oil & Refining Co.'s No. 1 Anderson, Section 29-18-5, is drilling sandy lime at 3,553 feet.

Bossier Parish

H. S. Goodwin is arranging to test 8 feet of sand 1,093-2,001 feet in No. 3 Curtis, Section 2-16-13. Gross and others (DuPont interests) are drilling No. 1, Stewart, Section 15-18-12, at 2,684 feet. D. P. Johnson's No. 1 Caddo Industries, Section 13-17-13, is drilling at 1,875 feet. Triangle Drilling Co.s No. 1 Bulkley, Section 9-20-13, is drilling at 2,265 feet and Walker and others are drilling No. 1 Antrim, Section 28-22-13, at 2,740 feet.

Claiborne Parish

El Dorado Chief Oil Co.'s No. 1 Jones, Section 8-20-6, is drilling limey shale at 2,500 feet.

Caddo Parish

J. T. Cox is drilling No. 1 Hall, Section 7-15-16, at 1,121 feet. Empire Gas & Fuel Corp.'s No. 1 Nicholson, Section 33-17-14, is in hard lime at 3,460 feet.

Caldwell Parish

Greenwood Production Co. is making a 3,500-4,000-foot test of No. 1 Caldwell Lumber Co., Section 27-13-5, and is drilling hard sand at 3,070 feet. Lochnager Oil & Gas Co. is starting its fifth test in Caldwell, having location for No. 2 McMillan, 130 feet north and 100 feet west SE cor. SE NW, Section 26-9-6. The Texas Company has set 15½-inch casing in No. 1 Tensas, Section 4-10-6, at 195 feet and is waiting for cement to set.

DeSoto Parish

Gulf Refining Co.'s No. 35-A Jenkins, Section 35-13-12, is coring at 2,542 feet. Williams and others' No. 2 Fortson, Section 4-12-11, is drilling at 1,050 feet.

East Carroll Parish

The Texas Company's No. 1 Boone Live Oak Planting Co., Section 11-20-12, is on a rock at 2,472 feet.

Franklin Parish

Louisiana Petroleum Co. is drilling No. 1 Daily, Section 6-11-7, at 950 feet.

Monroe District

Morehouse Parish—Elbert Petroleum Co. is drilling No. 1 Morehouse Planting Co., Section 40-19-7, at 2,383 feet. Gulf Refining Co.'s No. 1 Higginbotham, Section 42-20-7, is in shale and lime at 2,438 feet. The Texas Company's No. 1 Myers, Section 15-22-7, is drilling lime at 2,643 feet. United Carbon Co. has shut down No. 1 Bastrop Pulp & Paper Co., Section 18-21-6, at 2,657 feet.

Ouachita Parish—Pioneer Oil & Gas Co. has begun drilling No. 1 Nolan, Section 17-18-4, and Southern Carbon Co. has begun making hole on No. 9 Fairbanks, Section 34-20-4. J. P. White's No. 1 Schmidt, Section 4-15-4, is temporarily abandoned at 2,017 feet after testing dry at 2,720 feet and drilling gumbo at 2,962 feet.

Union Parish—Carter & Goodwin are shut down on No. 1 Hudson, Section 7-23-1e, waiting for 6-inch casing to be set at 2,270 feet.

Richland Parish

Bouef River Petroleum Co. has rig up for No. 1 D. R. Sartor, Section 9-15-6. Gulf Refining Co.'s No. 1 Millsaps, Section 8-17-6, is in hard lime at 3,550 feet. Moody-Seagraves' No. 1 McDonald, Section 9-15-5, cored hard sand at 2,812 feet the first since 2,557 feet in which it tested dry. Oliver & Masters' No. 1 Hatch heirs, Section 11-15-5, is drilling at 2,270 feet.

Sabine Parish

R. L. Gay's No. 1 Mansfield Lumber Co., Section 15-7-14, is drilling chalk rock at 2,618 feet. The Texas Company is drilling No. 1 Hamlin, Section 28-10-13, at 2,620 feet and Zwolle Oil & Gas Co.'s No. 1 Bowman-Hicks, Section 14-17-14, is shut down with 4½-inch casing cemented at 3,931 feet waiting for cement to set.

Tensas Parish

Enochs and others have rig up for No. 1 Curry, Section 39-11-12.

Winn Parish

Calvin Oil Co. has cemented 60 feet of 10-inch surface casing in No. 1 L. & A., Section 9-11-4w. H. M. Roark and others' No. 4 Southern Minerals Co., Section 19-11-3, is drilling at 800 feet.

ARKANSAS

Bradley County

Johnson & Adams passed through what appeared to be gas rock but made no showing at 3,150 feet and are drilling gumbo at 3,160 feet in No. 1 Southern Lumber Co., Section 12-12-12.

Columbia County

George Dawley is drilling gumbo at 2,000 feet on No. 1 Gantt, Section 12-17-22.

Dallas County

Decman and others junked No. 1 Hillman, Section 20-10-13, at 1,800 feet, skidded the derrick 38 feet west and started second hole on which they have set 80 feet of 12½-inch surface casing and are shut down at 518 feet.

Ouachita County

Timberlake and others are drilling No. 1 Carnes, Section 27-13-17, at 2,035 feet.

Union County

W. R. Keever is arranging to test 4 feet of sand 2,116-20 feet in No. 6-A Ezell, Section 12-17-15, with 6-inch casing cemented at 2,116 feet. Lion Oil Refining Co.'s No. 1 Nash, a semiwildcat in the Champagnolle district, has set 10-inch surface casing at 224 feet and is drilling at 1,240 feet. No. 1 Kelly, Section 9-17-14, has rig up ready to drill. J. O. Moore tested 2,400 feet of water in the hole from 5 feet of sand 2,711-16 feet, in No. 1 Pagan, Section 18-18-11, and is drilling at 2,747 feet. Ouachita Natural Gas Co. has set 191 feet of 10-inch surface casing in No. 1 Perdue, Section 33-16-14. Rhodes and others have derrick on location for No. 1 Amason in the SW cor. NE SE, Section 21-16-14, and No. 1 Union Saw Mill in Section 14-19-11, is arranging for drill stem test at 2,969 feet.

EAST TEXAS

Cass County

Hickman and others' No. 1 Mott in the Ambrose Douthitt Survey, is drilling at 3,210 feet.

Shelby County

Magnolia Petroleum Co. is drilling No. 2 Pickering, W. J. Crane Survey, at 2,566 feet.

MUSKEGON FIELD

(Continued from Page 56)

in the field to a total of 8 compared with 13 oil wells and two gas wells.

Lake Shore Petroleum Co.'s No. 1 DeVries was leading as the week closed in the race of five outfits to drill into the Traverse producing sands. All five are located on the celery beds at the foot of the high bank overlooking the Muskegon River flats. The rigs were erected along the north edge of a row of small celery tracts each owned by different farmers.

The Lake Shore well was drilling today at about 1,400 feet after having encountered a small show of oil in the red rock at 820 feet. No signs of the Berea sand were found in this well, according to the drillers. The well will be cased early next week and drilled in before the close of the week.

Drilling Depths

Others of the five had reached the following depths in drilling: Wolverine Development Co.'s No. 1 Workman, 970 feet; Citizens Petroleum Co.'s No. 1 A. Hinz, 800 feet; Bradley & Bradley's No. 1 Layman, 600 feet; and Citizens Petroleum Co.'s No. 1 Kooi, 100 feet.

The Wa-je-sel Oil Co.'s No. 1 Reeths was drilling at 1,225 feet after having encountered the Berea sands at 1,205 feet, or 25 feet lower than in the discovery well. This well is north and slightly west of the discovery well.

The Muskegon Oil Corp. has about completed rigging up for No. 2 H. Hinz well, SE NE Section 8. This will be an offset to Dixie Oil Co.'s No. 1 Figge-A well.

Negotiations for the commercial use of the natural gas which the field is capable of producing have not yet been completed.

GULF COAST FIELDS

(Continued from Page 51)

Sour Lake. Gulf Production Co.'s No. 1 Hamman is drilling at 4,634 feet. Humphreys Oil Corp's No. 1-G Bashara is down 4,105 feet, and Lake View Oil Co.'s No. 33 Hardin is drilling at 1,684 feet.

Pierce Junction—Harris County

Rio Bravo Oil Co. found a deeper producing level in its No. 5-A Settegast at 3,827 feet. This well, deepened from around 3,700 feet, came in flowing 750 bbls. daily. Moody Corp. also completed No. 1 Armstrong on the pump for 50 bbls. at 5,566 feet, but this well sanded up and is being worked on. Moody Corp. drilled into the salt in its No. 1 Settegast and abandoned the hole at 3,776 feet. This test originally was started by the Union Oil Co. Abercrombie & Harrison's No. 1 Ritter is drilling at 4,155 feet. H. R. Cullen's No. 5 Howe is down 3,690 feet. Gulf Production Co.'s No. 19 Taylor is drilling at 4,500 feet, and its No. 25 Taylor at 4,873 feet. Leonard and associates still are working on their No. 1 Settegast, which is in heaving shale at 5,790 feet. Moody Corp.'s No. 1 Alston is drilling at 4,290 feet and its No. 1 Boyle & Mincken at 4,562 feet. Navarro Oil Co.'s No. 10 Dooley is at 4,584 feet. Smith and associates' No. 3 Parsons at 2,345 feet, and Woodward and Lee's No. 4 Settegast at 3,574 feet. H. R. Cullen's No. 2 Lafferty, completed in April, flowing 700 bbls., and which stopped producing last week, was brought

back in flowing 500 bbls. when screen was reset.

Goose Creek—Harris County

Humble Oil & Refining Co. is swabbing in its No. 73 Simms Smith. This test, 1½ miles east of the main part of the field, has 5,000 feet of fluid standing in the hole, of which 100 feet is oil. Total depth of the hole is 6,159 feet. Gulf Coast Oil Corp. is drilling at 2,250 feet in its No. 5 Gaillard, an old well being deepened. Gulf Production Co.'s No. 10 Prather is at 2,440 feet.

Spindletop-Jefferson County

Yount Lee Oil Co. got a 750-bbl. well in its No. 57 Gladys City, on the southwest flank, at 3,010 feet. The oil, 30.1 gravity, is flowing through 2½-inch tubing on a half-inch choke. In the older part of the field, its No. 62 McFadden was brought in flowing 1,416 bbls. of pipeline oil through a half-inch choke from sand at 5,036 feet. No. 65 McFadden was completed in sand at 2,800 feet, flowing 1,130 bbls. through a half-inch choke. Gulf Production Co.'s No. 19 McLean was brought in flowing 60 bbls. from sand at 5,360 feet, but this well probably will be deepened or worked over.

Of particular interest at Spindletop is The Texas Company's No. 1 Gladys City, which encountered an oil sand and has cemented casing for a test. Total depth of this hole is 4,647 feet. The test is 600 feet northwest of production on the west flank.

Hull—Liberty County

The only new production at Hull was in W. E. Byrd's No. 3 Hankamer, an old well worked over and put on the pump for 30 bbls. net of oil. Gulf Production Co.'s No. 20 Phoenix still is blowing dry gas. Gulf has a rig up to deepen No. 51 Phoenix, and its No. 91 is drilling at 2,214 feet. Houston Production Co.'s No. 4 Taylor is down 4,923 feet, where it has a sand showing oil. Republic Production Co. has another rig up to deepen No. 79 Dolbear. It is drilling at 2,643 feet in No. 70 Dolbear, another old well, and at 2,238 feet in No. 104 Dolbear. The Texas Company's No. 1 Carr is down 1,265 feet.

Orange—Orange County

Orange Petroleum Co.'s No. 6 Winfree has been put on the pump, making 50 bbls. daily from sand at 3,157 feet. This was an old well deepened. Gulf Production Co. has set strainer for a test of sand at 3,548 feet in No. 12 Pevoto. Its No. 8 Chessom is drilling at 4,326 feet. Orange Petroleum Co. has a rig up to deepen No. 8 Chessom. Rex Petroleum Co. had a small blowout making gas and salt water in its No. 14 Carbello. Rycade Oil Corp. has a rig up to deepen No. 6-A State. Sinclair Oil & Gas Co.'s No. 3 Hager is drilling at 2,889 feet.

SOUTH LOUISIANA

Jennings—Acadia Parish

Cline, Smith & Cline encountered a sand showing oil below 1,600 feet and are making a test. Port City Oil Co. also has set casing for a test of oil sand at 1,598 feet. Salt Dome Oil Co.'s No. 2 Valle Arpent is drilling at 1,646 feet. E. L. Simms is drilling deeper in his No. 1 Cockrell, which drilled into what was thought to have been cap rock at 2,918 feet. It now is down below 3,100 feet. The Texas Company's No. 3 Rayne heirs is drilling at 4,575 feet. Yount Lee Oil Co. has a rig up and is spudding in on No. 4 Houssiere-Latrielle. Its No. 97 Crowley is drilling at 2,164 feet.

Lockport—Calcasieu Parish

Vacuum Oil Co. and Gulf Refining Co.'s No. 3 Farquahar is flowing 100 bbls. daily from sand at 3,770 feet. This is an old well deepened from 3,747 feet. These companies also have encountered a deeper sand in their No. 1 Bayou D'Inde at a total depth of 4,421 feet and have set 6⅝-inch casing. No. 3 Frieber & Wolf is drilling in sand at 3,397 feet. A rig is up for No. 1-B Fee and a derrick is up for No. 2-A Fee. No. 5 Lock-Moore is drilling sticky shale at 4,455 feet and No. 1 Calcasieu River is in shale and shell at 3,706 feet. No. 4-A Farquahar is drilling sandy shale at 2,236 feet. A derrick is up for No. 20 Miller.

Edgerly—Calcasieu Parish

Wilson & Broach have put their No. 2 Wilson, an old well deepened to 3,748 feet, on the pump, making 15 bbls. net of oil. C. M. Crotty's No. 13 Lillard is shut down temporarily at 2,164 feet. Green Oil Co. has a rig up for No. 10 Moore. Hercules Oil Co.'s No. 4 Paraffine has encountered a sand at 3,314 feet showing oil. Rex Petroleum Co.'s No. 4 Hunter is drilling at 4,130 feet.

Vinton—Calcasieu Parish

Gulf Refining Co. has a rig up to deepen its No. 36 Star-Vincent. Marrs McLean's No. 1 G. & N. G. is milling at 2,050 feet. Vinton Petroleum Co.'s No. 17 Gray drilled into heaving shale at 2,737 feet and is sidetracking. This company is drilling around 1,000 feet in its No. 16 Harmony.

Hackberry—Cameron Parish

The East Hackberry Dome has taken on considerable activity the past week with a half dozen new tests starting. Yount Lee Oil Co. has started drilling in its Nos. 9 and 11 state land in Kelso Bayou. It also has locations for Nos. 12 and 13 state land. Louisiana Land & Exploration Co. has a derrick for No. 2-B Calcasieu Lake, and Calcasieu Oil Co. has a rig up for No. 4 Watkins. The company also has applied for a permit for No. 5 Watkins. Calcasieu Oil Co.'s No. 2 Dorion is drilling below 1,728 feet. No. 3 Caldwell is pulling screen to deepen. Yount Lee Oil Co. has abandoned its No. 7 State land after drilling to 4,503 feet.

Miscellaneous Fields

At High Island, Galveston County, Gulf Production Co.'s No. 1 League is drilling at 2,635 feet. Marrs McLean's No. 13 Cade is down 3,022 feet. Harrison Oil Co. has a derrick up for No. 3 Quintette at North Dayton, Liberty County. The latter is 200 feet west and 50 feet south of No. 2, which was abandoned several months ago.

At Barbers Hill, Chambers County, Bennett Petroleum Co. is working over its No. 4 Fee, which was completed two years ago in sand at 3,200 feet. Gulf Production Co.'s No. 15 Moore, Orchard, Fort Bend County, is drilling at 4,435 feet.

Gulf Refining Co.'s No. 9 Lutcher-Moore at Starks Dome, Calcasieu Parish, La., is drilling around 600 feet.

CALIFORNIA FIELDS

(Continued from Page 47)

be given a test from approximately the same depth during the next 10 days.

Midway-Sunset

The Chanslor-Canfield Midway Oil Co. cored an exceptionally heavily saturated oil sand in its No. 29 in Section 8-32-23 and this well, an offset to the Republic Petroleum's No. 25 in the Midway-Sunset Field, which came in several months ago flowing in excess of 1,000 bbls. per day from a hitherto unsuspected lower zone at 2,704 feet, should register substantial production when given a test within two weeks. The Chanslor-Canfield Midway company is running in a string of 10-inch preparatory to an early test and this will be landed at approximately 2,100 feet. The Republic Petroleum's discovery well is holding up exceptionally steady at approximately 1,100 bbls. per day three months after completion. The California Star completed No. 640 out on the West Front of the Kern River Field, which showed an initial daily output of 120 bbls. from 2,565 feet. It was shut in immediately in conformity with the general shut down affecting this area. The Honolulu Consolidated completed No. 55 Tibbett in the Round Mountain Field and this producer, located in Section 18-28-29, registered an initial daily production of 935 bbls. daily from 2,123 feet, the oil testing 16.4 degrees. The California Petroleum Corp. expects to complete No. 1 Glide, a new well in the Mount Poso Field, within a few weeks and this well, standing cemented at 1,481 feet, is favorably located.

Northern California Wildcats

There were no developments of special significance in northern California wildcatting circles except the possible minor showings picked up by the Midway Northern Oil Co. in No. 1 Brown at Edison, 7 miles east of Bakersfield in Kern County. A core sample reacted favorably to the ether test but the development of a fishing job has prevented any further work. The General Petroleum Corp., which resumed drilling on its No. 1 Edison following the failure of this well to result in clean sustained production from around the 4,150-foot level was rotating a few days ago at 5,134 feet. This well, one of the first wildcats to be drilled in the Edison area in Kern County, showed a potentiality of approximately 125 bbls. a day when given a preliminary production test from the 4,150-foot level several months ago.

J. E. O'Donnell has temporarily suspended drilling operations on his Greenfield wildcat 6 miles south of Bakersfield at 4,030 feet but will probably resume work within a few weeks. The North American Consolidated is making preparations to pull out and abandon its Delano wildcat at 5,700 feet and while the failure to develop production is naturally discouraging it should not prevent further wildcatting in this vicinity, notwithstanding the Chanslor-Canfield Midway Oil Co. drilled two dusters near Delano. The Pacific Eastern Production Co., scheduled to drill a third test in the Union Avenue area south of Bakersfield, has not yet started rig construction but will probably do so within three weeks. Considerable geological work has been undertaken in the eastern side of the San Joaquin Basin and the numerous geological parties working in that area indicate a probable increase in the present scope of prospecting.

KANSAS FIELDS

(Continued from Page 44)

area, although it is more likely that the area will be controlled.

Leasing activity in western Kansas has slowed up slightly. It is reported that a block of leases is being formed in Marion County in the south part of Township 21-2, near the town of Hillsboro. In the same county, C. B. Davis is reported constructing a rig in a block of leases alleged to be on a core drilled structure. The rig is No. 1 Johnson, SW cor. NW, Section 7-19-3.

Lost Springs Production

The daily average production of the Lost Springs district for the week ending May 12 is given below:

Phillips Pet. Co.:	
Wells Rezineck	25
T. Rezineck	111
Peterson	320
McCoy	64
Mowrer	5
Frank	10
Prairie Oil & Gas Co.:	
Mowrer	70
Rezineck	41
Lariaux and others:	
Barnes	30
Shoup	20
Peterson	32
Merillat	150
Fowler	28
School Lot	151
Reynolds and others:	
Netrourer	31
Zinn	141
Independent Oil & Gas Co.:	
Bevan	51
Mowrer	37
Sinclair Oil & Gas Co.:	
Bevan	68
Braden & McClure:	
Smith	18
Harwood & Winters:	
Ucker	10
Youker & Loomis:	
Bozington	184
W. R. Ramsey:	
Bolby	60
Ward and others:	
Layton	6
Graham Brothers:	
Nelson	23
White Eagle Oil & Ref. and others:	
Thompson	28
Total barrels from 32 wells	1,696

Churchill Pool

The daily average production of the Churchill Pool of Sumner County by companies for the week ending May 12 was as follows:

Roxana Pet. Corp.	9,904
Derby Oil Co.	668
Vickers Pet. Co.	181
Wentz Oil Corp.	216
Total barrels from 66 wells	11,069

Oxford Townsite

The daily average production of the Oxford Townsite Pool for the same period was:

Roxana Pet. Corp.	7,007
La Robb and others	107
Ramsey Block 87	164
Sharp	8
Pickard	135
Amerada & Wasson	3,133
Barnsdall & Palmer	3,505
Mead Brothers	123
Stanley & Jarvis	190
Ramsey's Fine	6
Shawver and others Block 85	31
Shawver Block 22	107
Derby Oil Co. Block 88	31
Ramsey Caldwell	225
Derby & Spence	161
Total barrels from 82 wells	15,497

Butler County

Allison & Fitzwilliams' No. 5 McGinnis, NE cor. Section 9-27-6, made 150 bbls. from sand 3,126-44 feet.

Chase County

Denman and others' No. 1 Ewers, C NW SE, Section 15-18 6, is dry and abandoned at 1,564 feet.

Cowley County

Roth & Faurot made location for No. 4 Winfield Townsite, Lot 4, Block 38, Section 22-32-4. White Eagle Oil & Refining Co. has the rig on the ground for No. 1 Smith, SE cor. NE SE, Section 26-34-5. T. B. Slick and others' No. 2 Conrad, SW cor. NW, Section 19-32-3, has been abandoned at 3,515 feet.

Dickinson County

Phillips Petroleum Co.'s No. 1 Gugler, SE cor. NW, Section 11-14-4, is dry and abandoned at 2,218 feet.

Chautauqua County

The Prairie Oil & Gas Co. made location for No. 1 Wallace, NE cor. SW, Section 20-34-9.

Elk County

Empire Oil & Refining Co.'s No. 4 Porter, SW cor. NE NW, Section 13-29-8, an old well, is drilling deeper at 2,800 feet. Denman and others moved a machine in for No. 3 Lewis, SE cor. SW SE, Section 35 31-10.

Greenwood County

Shaffer Oil & Refining Co. and others' No. 1 Schwab, NW cor. SW SE, Section 30-22-13, is a rig being built. Simmons and others' No. 1 Fankhouser, NE cor. SW, Section 26-22-12, has been abandoned at 1,788 feet. Polhamus and others' No. 1 Gopher, SW cor. SE SW, Section 35-25-10, is dry and abandoned at 430 feet. Cross & Gilliland's No. 2 Burton, C SE SE, Section 9-25-13, is dry and abandoned at 1,605 feet.

Marion County

Youker & Hoffman moved the rig out for No. 1 Martin, SE cor. SW, Section 3-17-4. Phillips Petroleum Co. has the rig up for No. 2 Franks, SW cor. SE SE, Section 15-17-4, Lost Springs Pool. Lariaux and others' No. 4 Merrilatt, SW cor NW NE NW, Section 23-17-4, is a rig under construction.

Lariaux and others' No. 3 Merrilatt, SW cor. SE NW, Section 23-17-4, Lost Springs Pool, was completed for 185 bbls. in sand 2,327-91 feet. No. 1 School Land, SW cor. NW NW NW, Section 23-17-4, made 200 bbls. from sand 2,346-51 feet. Johnson and others' No. 1 Thompson, SW cor NE, Section 26-17-4, is a 40-bbl. well in sand 2,355-84 feet.

Russell County

Wilcox Oil & Gas Co.'s No. 3 Mermis, SE cor. Section 18-12-15w, has been completed for 200 bbls. in sand 3,040-45 feet. Streeter & Stearns' No. 1 Gorham, SW cor. NE, Section 33-13-15w, Gorham Pool, is dry and abandoned at 3,350 feet.

Saline County

Estey and others' No. 1 Peterson, C NE, Section 6-16-5w, is rigging up.

Sumner County

Ramsey and others made location for No. 3 Caldwell, NE cor. SE NE NE, Section 22-32-2.

Woodson County

Spencer & Rainey's No. 1 Kimball, SE cor. NE, Section 32-24-14, is dry and abandoned at 1,754 feet.

Fairport Field

A special article on the Fairport Field of Russell County, by Thomas H. Allan and M. M. Valerius, was published in the March 15, 1928, issue of The Oil and Gas Journal, page 75.

OKLAHOMA FIELDS

(Continued from Page 44)

Oil Co. moved a machine out for No. 5 Haikey, NE cor. NW SW, Section 33-18-14.

Glidden Oil Corp.'s No. 4 Johnson, CNL SW NE, Section 15-19-11, made 30 bbls. from sand at 1,781-99 feet. Sand Springs Home's No. 3 Unallotted, SW cor. SE NE, Section 23-19-11, was com-

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pleted for 1,000,000 feet of gas in Dutcher sand at 1,804-10 feet. Suppees and others' No. 5 Mackey, SW cor. SE SW, Section 34-19-12, made 10 bbls. from Hominy sand at 2,100-08 feet. Ellen Oil & Gas Co.'s No 4 Island, NE cor. NW NE, Section 25-18-14, has been abandoned at 1,335 feet. E. A. Hawley's No. 1 Taylor, SE cor. NE, Section 1-17-13, was abandoned at 200 feet.

Woods County

George Vincent and others made location for No. 1 Freedom, C SW, Section 11-28-18w.

Beckham County

Magnolia Petroleum Co. is erecting the rig for No. 1 A. Davis, SW cor. SE SE, Section 21-9-23w.

Carter County

Schermerhorn Oil Co. and others' No. 4 Crockett, NW cor. NE SW, Section 23-1s-3w, is drilling at 140 feet. Magnolia Petroleum Co. moved material in for No. 1 Miller, SW cor. Section 28-1s-3w.

The Texas Company's No. 1 Woodward, SE cor. SW SE, Section 15-1s-3w, has been abandoned at 2,875 feet. Magnolia Petroleum Co.'s No. 5 I. Bumpass, SW cor NW SE, Section 33-1s-3w, is pumping 104 bbls. from sands at 3,318-3,690 feet.

Comanche County

Jolly-Ogg Oil Co.'s No. 1 Sparlin, SE cor. NE, Section 24-3-10w, has been abandoned at 3,009 feet.

Cotton Valley

Guiler & Pyson moved rig material in for No. 1 Thomas, SE cor. SW, Section 16-4s-12w. Cullum and others' No. 1 Chambers, NE cor. SW, Section 35-1s-10w, is dry and abandoned at 2,360 feet.

Custer County

W. E. Witt made location for No. 1, C SW, Section 1-14-14w.

Garfield County

Marland Oil Co.'s No. 1 Rhoades, NW cor. NE NW, Section 30-23-3w, has been completed for 43,000,000 feet of gas in sand at 5,485-5,506 feet.

Grady County

Oklahoma Gas Utilities Corp.'s No. 12 Farwell, SE cor. NE SW, Section 26-5-9w, is drilling at 2,275 feet. Noble & Westerfelt's No. 6 McCaughtry, SW cor. NE NW, Section 35-5-8w, is rigging up rotary tools. Simpson & Fell's rig is up for No. 1 M. Long, SE cor. NW NW, Section 36-5-7w. Wirt Franklin Oil Corp. made location for No. 1 Long, SW cor. NE, Section 31-5-6w. Watchorn Oil & Gas Co. is building the rig for No. 2 Huling, SW cor. NW, Section 13-4-8w. Twin State Oil Co. made location for No. 2 Cox, NE cor. SE, Section 14-4-8w. Magnolia Petroleum Co.'s No. 8 Farwell, SE cor. NW SE, Section 23-5-8w, has been completed for 37,000,000 feet of gas at 2,297 feet. Oklahoma Natural Gas Corp.'s No. 5 Smith, NE cor. SW SW, Section 26-5-8w, set pipe at 2,000 feet, drilled to 2,390 feet and gauged 45,000,000 feet of gas. Carter Oil Co.'s No. 5 C. Kerans, NW cor. NE SE, Section 21-3-5w, Carter-Knox Pool, was deepened from 1,791 feet to 1,796 feet and increased to 110 bbls.

Hughes County

Dixie Oil Co.'s No. 2 Diamond "B," NE cor. SE, Section 18-8-10, is being deepened from 2,750 feet and now drilling at 3,910 feet. Indian Territory Illuminating Oil Co.'s No 1 Bingham, NW cor. SE SW, Section 8-5-8, Allen Pool, is rigging up to deepen from 2,671 feet. Dixie Oil Co. and Phillips Petroleum Co.'s No. 2 Perryman, SE cor. SW, Section 17-8-10, was completed for 4,000,000 feet of gas and 10 bbls. oil in sand at 3,242-3,306 feet.

Jefferson County

Sigler and others' No. 1 Peniston, NW cor. SW SW, Section 16-7s-5w, is drilling at 1,635 feet.

Logan County

Blackwell Oil & Gas Co. is digging ponds for No. 1 Quigley, SE cor. NW SW, Section 21-18-4w, Lovel area. Sinclair Oil & Gas Co.'s No. 1 Weber, SE cor. Section 18-19-4w, is making 53,000,000 feet of gas and a large quantity of gasoline from 4,575 feet, total depth 4,809 feet. Texas Pacific Coal & Oil Co.'s No 1 Jewell, NW cor. NE NW, Section 27-18-4w, drilled to 6,285 feet and plugged back and completed for 4,000,000 feet of gas at 3,856 feet. Ramsey Brothers' No. 1 Smith, NE cor. SW, Section 33-18-4w, Lovel Pool, made 40 bbls. from Tonkawa sand at 4,126 feet after plugging back from 4,750 feet. T. B. Slick's No. 1 Signs, NW cor. SE, Section 20-17-1, is dry and abandoned at 5,062 feet.

Marshall County

Humble Oil & Refining Co. moved a machine out for No. 3 Sullivan, NE cor. Section 25-5s-5.

Muskogee County

Bryan & Emery's No. 3 N. Barnett, C SE NE, Section 8-15-15, is rigging. Star Development Co. moved a machine in to deepen No. 2 Morris, SW cor NE SE, Section 20-15-15. J. E. Sweatt has a machine at the location for No. 1-A Davidson, CNL SE SW, Section 24-15-17. Hogan & Brewer's No. 1 McKellop, SW cor. NW NW, Section 36-15-18, is drilling at 200 feet. J. R. Parks' No. 2 Benge, NE cor. SE NE NW, Section 13-15-19, is drilling at 400 feet. C. D. Bradley has a machine at the location for No. 2 Rogers, NE cor. SW, Section 21-15-19. W. J Metzger and others moved a machine out for No. 1 Francis, SW cor. SE SW, Section 1-14-18.

Scotch Oil Co.'s No. 1-A Crabtree, SE cor. NW NE, Section 2-14-18, is drilling at 135 feet. Tidal Oil Co. has a machine at the location for No. 12 Grimmett, C SW SW, Section 5-14-18. J. L. Dixon and others' No. 1 Scott, SW cor. NW SE, Section 11-14-18, is drilling at 450 feet. Robinson Brothers' No. 3-A Tipton, NE cor. SE NE, Section 7-14-19, is spudding. L. T Haney and others' No. 1 Webber, SW cor. NE NE SE, Section 17-14-20, is spudding. Herbert Oil Co.'s No. 2 Foreman, CWL E half SE NW, Section 14-13-18, is drilling at 500 feet.

Star Development Co.'s No. 3 Morris, CWL NE SE, Section 20-15-15, has been abandoned at 1,089 feet. Jolly-Ogg Oil Co.'s No. 1 Serrell, NE cor. SE NE, Section 21-15-15, is dry and abandoned at 2,215 feet. Tidal Oil Co.'s No. 9 Sanders, NW cor. SE SW, Section 34-15-18, has been completed for 3 bbls. in sand at 1,053-75 feet. C D. Bradley's No. 1 Baldridge, SW cor. NW, Section 15-15-19, is dry and abandoned at 1,610 feet. Minnie Reed's No. 1 Wade, NE cor. SE SE SW, Section 31-15-19, is a dry hole at 1,436 feet. J. E. Sweatt's No. 1 Parnell, SW cor. SE SE, Section 31-15-19, is dry and abandoned at 1,248 feet. L. W. Sterling's No. 1 Tiger, SE cor. NW NE, Section 1-14-18, has been abandoned at 600 feet.

J. Bramer and others' No. 1 Ross, SW cor. NW SE, Section 4-14-19, is dry and abandoned at 600 feet. R B. Wheeler's No. 1 Price, NW cor. NE SW, Section 4-14-19, is dry and abandoned at 608 feet. J. C. Becker's No. 2 Kelley, NW cor. SE NE, Section 5-14-19, has been abandoned at 625 feet. P. H. Stein's No. 2 Cobb, NE cor. SE NW SW, Section 6-14-19, is a dry hole at 555 feet. Hilcrest Oil Co.'s No. 1-A Kell, NE cor. NW, Section 7-14-19, has been abandoned at 1,080 feet. M. S. Messellem's No 2 Evans, SW cor. SE, Section 32-14-19, has been completed for 8,000,000 feet of gas in sand at 1,448-49½ feet.

Okfuskee County

Devonian Oil Co. has the rig up for No. 1 Fier, SE cor. SW NE, Section 11-10-11. McCulloch Oil Co. and others moved the rig in for No. 1-A Hully, NE cor. NW NE, Section 29-10-10. The Texas Company made location for No. 3 Tiger, SW cor. NE SE, Section 35-11-11. Champlin Oil & Refining Co. has the rig up for No. 5 Tucker, SE cor. NW, Section 15-11-11.

W. L. Umbrum's No. 1 Hill, SE cor. NE NW SE, Section 11-10-11, has been completed for 25 bbls in stray sand at 1,610-30 feet. Henry Oil Co. and others' No. 1 Sears, SE cor. NE, Section 5-11-11, is dry and abandoned at 3,164 feet. Blakely and others' No. 1 Yahola, SW cor. SE NW, Section 8-12-10, lost the hole at 3,167 feet and has been abandoned.

Okmulgee County

Kirkland & Son's No. 8 Bell, SE cor. SW SW NE, Section 17-15-13, is drilling

at 1,370 feet. McInturff and others' No. 2 Edwards, NW cor. SE NE, Section 4-12-14, is drilling at 800 feet.

E. W. Dodge's No. 1 Bright, CEL NW SE, Section 29-15-12, was completed for 100,000 feet of gas in sand at 288-300 feet. Noble Oil & Gas Co.'s No. 2 Fisher, NE cor SW, Section 6-15-13, has been abandoned at 2,635 feet. Kirkland & Son's No. 7 Louiney, SW cor. NW SE, Section 17-15-13, made an 8-bbl. well in sand at 1,319-73 feet. O. D. Stansbury's No. 1 Harrison, SW cor. NW SE, Section 25-15-14, is dry and abandoned at 480 feet. J. E. Wallace's No. 9 Colbert, NE cor. NW SE, Section 14-14-14, is a 12-bbl. well in sand at 1,643 50 feet. G. H. Lowerre's No. 1 Eubanks, SW cor. NE NE, Section 17-13-14, is dry and abandoned at 1,831 feet. J. Aggas' No. 7 Foster, SE cor. SW SW, Section 6-13-15, is making 15 bbls. from sand at 2,017-64 feet.

Pontotoc County

Westheimer & Daube's No. 3 Millner, SE cor. Section 8-5-8, Allen Pool, is a rig on the ground. Homaokla Oil Co.'s No. 10 McCall, NW cor. NE NE, Section 17-5-8, flowed 600 bbls. from sand at 2,525-2,600 feet. No. 4 Berry, NW cor. NE SE, Section 19-5-8, made 642 bbls. from sand at 2,761-95 feet.

Pottawatomie County

Stogner and others built the rig for No. 1 St. Louis Townsite, SW cor. Section 14-7-4. Carter Oil Co. made location for No. 2 Davis, NE cor SE, Section 19-7-4, Pearson Pool. Gypsy Oil Co. is building the rig for No. 4 Cecil, NW cor. SE NE, Section 19-7-4. Interocean Oil Co. made location for No. 1 McGee, SW cor. NW SE, Section 23-7-4. Sinclair Oil & Gas Co. has the rig up for No. 1 Blandin, NW cor. SW, Section 24-7-4, St. Louis Pool.

Seminole County

Sinclair Oil & Gas Co. is erecting the rig for No. 4 Sango, NW cor. SE NE, Section 2-9-5, Earlsboro Pool. Indian Territory Illuminating Oil Co.'s No. 1 Simpson, SE cor. NE, Section 10-8-5, is rigging up rotary tools. T. B. Slick made location for No. 1 Jones, SW cor. SE SE, Section 3-8-6, Seminole Pool. Location was also made for No. 2 Jones, SE cor. SW SE, Section 3-8-6. Twin State Oil Co. made location for No. 1 Hayes, NW cor. NE NE, Section 8-8-6, Bowlegs Pool. Pure Oil Co. is moving in rotary tools for No. 6 Strothers "F," SW cor. NE NW, Section 10-8-6. Rotary tools are also being moved in for No. 7 Strothers "F," SE cor NW NW, Section 10-8-6. Homaokla Oil Co.'s No. 2 Brown, NE cor. SW SE, Section 29-8-8, is rigging up to deepen from 3,993 feet to the Wilcox sand.

Mid Continent Petroleum Corp.'s No. 12 Fleet, NW cor. SW SE, Section 7-5-8, Allen Pool, is a rig up. The Texas Company's No. 3 Hyde, SE cor. NE SE, Section 7-5-8, is rigging up to deepen from 2,630 feet. No. 2 Hyde, SW cor. NW SW, Section 8-5-8, is drilling deeper at 2,495 feet. Anderson & Prichard's No. 2 Culley, SE cor. SW NE, Section 18-5-8, is rigging up rotary tools. Gilcrease Oil Co.'s No. 1 Reed, NE cor. NW NE, Section 18-5-8, is rigging up to deepen below 2,650 feet. Sunray Oil Co.'s No. 6 Culley, NE cor. SW NE, Section 18-5-8, is spudding. No. 7 Culley, NW cor. SE NE, Section 18-5-8, is setting surface pipe at 90 feet.

Superior Oil Co. and others' No. 1 Walker, SE cor. NE NE, Section 2-9-5, Earlsboro Pool, made 6,922 bbls. from Wilcox sand at 4,377-90 feet. Twin State Oil Co.'s No. 7 Barker, SE cor. NE NE, Section 12-9-5, drilled to 4,264 feet, plugged back to 4,230 feet and lost the hole and was abandoned. Magnolia Petroleum Co.'s No 2 Hyde, NE cor. SE NW, Section 13-9-5 lost the hole at 3,375 feet and has been abandoned.

Sinclair Oil & Gas Co.'s No. 2 W. Taylor, NW cor. NE NE, Section 10-8-6, has been completed for 805 bbls. in Wilcox sand at 4,304-29 feet. Dixie Oil Co.'s No. 1 Culley, SW cor. NW NW, Section 11-8-6, swabbed 245 bbls. from Wilcox sand at 4,288-99 feet. Sinclair Oil & Gas Co.'s No. 3 Cosar, NW cor. Section 36-8-6, Little River Pool, has been completed for 1,330 bbls. from Wilcox sand at 4,473-81 feet. Gypsy Oil Co.'s No. 3 Renton, SW cor NE NE, Section 11-7-6, made 2,270 bbls. from Wilcox sand at 4,088-4,113 feet. Mid-Continent Petroleum Corp.'s No. 1 Bruner, SE cor. Section 11-7-6, made 4,910 bbls. from Wilcox sand at 4,350-56 feet. Pure Oil Co.'s No. 1 Harjo, NE cor. SW NE, Section 11-7-6, had Wilcox sand at 4,200-18 feet and made 3,045 bbls. Gypsy Oil Co.'s No. 1 Hulhole, NE cor. SE, Section 14-7-6, had an initial production of 2,555 bbls. from the Wilcox sand at 4,441-44 feet.

Sinclair Oil & Gas Co.'s No. 1 Tewee, NW cor SW NE, Section 14-7-6, Little River Pool, was completed for 3,285 bbls. in Wilcox sand at 4,125-30 feet. The Prairie Oil & Gas Co.'s No. 1 Hudson, SW cor. SE SE, Section 12-7-6, has been abandoned at 4,342 feet in Wilcox sand topped at 4 215 feet. Independent Oil & Gas Co.'s No. 5 Harris, SE cor. NW, Section 23-7-6, made 2,590 bbls. from Wilcox sand at 4,290-95 feet. Carter Oil Co.'s No. 1 Spillman, SE cor. SW SW, Section 7-6-8, has been shut in for 9,000,000 feet of gas in sand at 2,831-46 feet.

Stephens County

Wirt Franklin Petroleum Corp. is building the rig for No. 1-B Drake, SW cor. NE, Section 12-1s-4w. Pace and others' No. 1 Smith, SW cor SE, Section 35-1s-8w, is rigging up rotary tools. No. 3 Wilson, SE cor. NE, Section 12-2s-8w, is drilling at 1,440 feet. Maer & Stanforth built the rig for No. 1 Renes, SW cor. NW NW, Section 7-2s-7w. Petroleum Producers Co. and American Pipe Line Co.'s No. 4 Brown, SW cor. NW, Section 7-2s-7w, is rigging up a rotary outfit. The Prairie Oil & Gas Co. made location for No. 1 Bond, NW cor. SW SW, Section 7-2s-7w. Petroleum Producers Co. and American Pipe Line Co. has the rig up for No. 4 Bond, SE cor. SW NW SW, Section 7-2s-7w.

Magnolia Petroleum Co.'s No. 4 Burke, SE cor. SW NE, Section 34-1s-8w, has been completed for 30 bbls. in sand at 1,661-75 feet. Murphy Oil Co.'s No. 12 Fobb "B," NE cor. NW SW, Section 12-2s-8w, made 20 bbls. from sands at 2,031-52 feet and 2,059-63 feet. Petroleum Producers Co. and American Pipe Line Co.'s No. 2 Bond, SW cor. NW SW, Section 7-2s-7w, is flowing 120 bbls. from sand at 1,516-38 feet. Maer & Stanforth's No. 1 Bond, SW cor. SE, Section 7-2s-7w, has been abandoned at 2,299 feet. Muse and others' No. 1 Brown, SW cor. NE, Section 7-2s-7w, is dry and abandoned at 2,303 feet. Petroleum Producers Co. and American Pipe Line Co.'s No. 2 Brown, NW cor. SW SW NW, Section 7-2s-7w, is flowing 240 bbls. from sand at 1,559-65 feet. George Pace and others' No. 1 Bristowe, NE cor. SE NW, Section 18-2s-7w, made 30 bbls. from sand at 1,481-88 feet. No. 1 Absner, NW cor. Section 7-3d-7w, has been abandoned at 2,267 feet.

Tillman County

A. N. Pearson and others' No. 1 Indian, SW cor. Section 3-5s-15w, is drilling at 600 feet.

Greater Seminole Production

The production by leases and companies of the Greater Seminole area on Wednesday, May 9, is given below:

Little River Pool

Company, farm—	Location	Wells	Prod.
Amerada:			
Nitey	2- 7-6	3	2,380
Amerada-Wilcox:			
Fore	35- 8-6	2	640
Barnsdall:			
Hotulke	22- 7-6	1	32
Blackwell:			
Nitey	35- 8-6	6	2,934
Carter:			
Fish	36- 8-6	6	1,405
Jackson	11- 7-6	1	1,835
Wilson	12- 8-6	1	3,275
Continental:			
Cosar	36- 8-6	4	1,875
Gypsy:			
Brown	33- 8-6	1	50
Conard	22- 7-6	1	50
Campbell	36- 8-6	2	157
Denmark	11- 7-6	1	50
Mungee	1- 7-6	1	32
Hulhoke	14- 7-6	1	50
Pettle	35- 8-6	3	370
Renton	11- 7-6	2	2,777
Independent:			
Harris	23- 7-6	2	200
Davis	2- 7-6	3	2,880
I. T. I. O.:			
Campbell	1- 7-6	1	87
Dungan	35- 8-6	3	2,120
M. A. House	1- 7-6	1	226
W. E. House	1- 7-6	1	54

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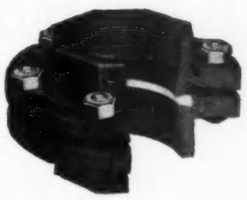

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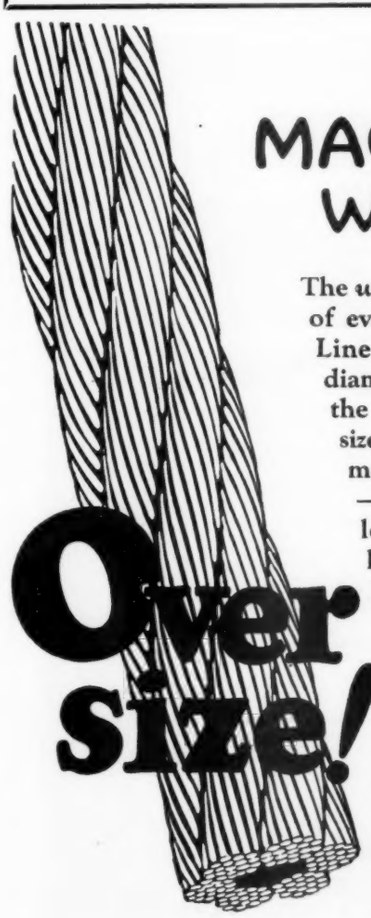

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W. E. House "B"	2-	7-6	4	2,254
Hull	26-	8-6	1	75
Jackson	1-	7-6	3	1,738
McCulla	1-	7-6	3	804
Nitey	2-	7-6	7	952
Phoebe "A"	36-	8-6	3	621
Phoebe "B"	36-	8-6	4	344
Reed	1-	7-6	1	72
Soketheche	1-	7-6	4	882
Magnolia:				
Cruse	2-	7-6	4	1,411
Pottie	35-	8-6	3	680
Mid-Continent:				
Bruner	11-	7-6	1	100
Smith	5-	7-7	1	30
Wadsworth	36-	8-6	7	935
W. B. Pine:				
Hoyecha	26-	8-6	1	895
Pine-Phillips:				
Pottie	35-	8-6	2	525
Pure:				
Harjo	11-	7-6	1	2,770
Prairie:				
Chilcoat	25-	8-6	1	875
Dungan	35-	8-6	1	....
House	2-	7-6	4	1,545
Reiter-Foster:				
Bunyard	14-	7-6	1	105
Shaffer:				
Narcome	36-	8-6	1	105
Sinclair:				
Cosar	36-	8-6	3	1,895
Tewee	14-	7-6	1	100
Snowden-McSweeney:				
Tiger	13-	7-6	1	....
Superior:				
Soketheche	1-	7-6	1	10
Texas-Independent:				
Hotulke	23-	7-6	1	55
Texas:				
Coker	1-	7-6	4	940
Tidal:				
House	1-	7-6	3	715
Johnson	1-	7-6	1	60
Total			120	44,982

Maud Pool

Barnsdall:				
Fife	14-	8-5	1	....
I. T. I. O.:				
State	16-	8-5	1	....
Total			2	....

Bowlegs Pool

Amerada:				
Roscoe	15-	8-6	8	1,660
Atlantic:				
Baker	10-	8-6	4	365
Fleet	23-	8-6	3	280
Grayson	13-	8-6	4	579
A. Jones	16-	8-6	3	90
C. Jones	9-	8-6	2	122
Barnsdall:				
McNac	28-	8-6	1	26
Murrow	11-	8-6	4	828
Carter Oil:				
Bowlegs	15-	8-6	4	1,370
Burden	23-	8-6	3	260
Harjoche	14-	8-6	6	650
Hilly	23-	8-6	3	860
Jones	11-	8-6	4	1,125
McGeisey	21-	8-6	1	20
S. Mecco	9-	8-6	1	160
Melissa	9-	8-6	1	110
Walker	15-	8-6	4	580
Wise	23-	8-6	11	2,435
Dixie:				
Culley	11-	8-6	1	55
Empire:				
Lacy	14-	8-6	6	456
Wise	23-	8-6	2	315
Gypsy:				
Bowlegs	22-	8-6	1	180
Bradley	9-	8-6	1	....
Cumsey	10-	8-6	4	1,222
Doser	7-	8-6	1	100
Grayson	13-	8-6	4	730
Harjoche	10-	8-6	2	1,950
Jones	11-	8-6	1	227
Walker	15-	8-6	8	1,652
Wise	23-	8-6	2	172
I. T. I. O.:				
Barnett	24-	8-6	2	269
Barnett "B"	23-	8-6	1	215
Billington	22-	8-6	5	726
Bowlegs	22-	8-6	10	1,383
Davis	13-	8-6	4	1,082
Fay	13-	8-6	9	2,254
Goforth	15-	8-6	12	1,566
Livingston	15-	8-6	10	3,449
Lizzie	13-	8-6	2	285
Walker	15-	8-6	8	775
Wilmott	15-	8-6	4	344
Work	24-	8-6	1	130
Youngblood	24-	8-6	2	172
Magnolia:				
Davis	13-	8-6	3	453
M. Davis	13-	8-6	1	246
Hammond	10-	8-6	5	837
Rhodes	12-	8-6	5	3,534
Van Buskirk	9-	8-6	1	315
McCulloch:				
Bowlegs	22-	8-6	2	380
Mid-Continent:				
Baker	10-	8-6	4	1,256
Bowlegs	22-	8-6	1	15
Smith	12-	8-6	6	415
Minnehoma:				
Bowlegs	15-	8-6	4	122
Prairie:				
Gahagan	23-	8-6	4	177
Harber	10-	8-6	8	2,675
Jones	11-	8-6	4	410
Templeton	12-	8-6	6	2,760
Whitney	23-	8-6	4	370
Pure Oil:				
Reed	14-	8-6	14	2,469
Strother "D" 11 &	14-	8-6	4	679
Strother "F"	10-	8-6	4	1,901
Roxana:				
Taylor	16-	8-6	5	531
Shaffer:				
Lacy	14-	8-6	3	220
Sinclair:				
Bowlegs	22-	8-6	1	75
Cumsey	10-	8-6	4	3,328
Ellen	11-	8-6	7	989
Harjo	14-	8-6	3	545
Jones	9-	8-6	7	2,370
Taylor	10-	8-6	4	2,126
W. Taylor	10-	8-6	2	1,523
Walker	22-	8-6	4	1,020
Texas:				
Reed	14-	8-6	11	2,000
Tidal:				
Grayson	13-	8-6	4	510
Harjoche	10-	8-6	6	1,675
Twin States:				
Jones	11-	8-6	3	87
Total			312	67,265

Earlsboro Pool

Amerada:				
Anderson	15-	9-5	2	1,135
Cowden	4-	9-5	7	1,770
Rogers	3-	9-5	2	1,110
Atlantic & Sinclair:				
Foreman	18-	9-5	1	160
Barnsdall:				
Brown	10-	9-5	4	2,039
F. Bruner	2-	9-5	2	921
N. Bruner	10-	9-5	4	1,073
Cudjo	14-	9-5	1	26
D. Davis	11-	9-5	3	327
J. Davis	11-	9-5	4	1,290
M. Davis	11-	9-5	3	115
Gibson	9-	9-5	8	3,034
Hern	15-	9-5	1	4
Ingram	1-	9-5	8	3,400
S. Pack	10-	9-5	4	202
Peter	10-	9-5	4	225
Sango	1-	9-5	3	7,513
Sebolka	15-	9-5	1	528
H. Sullivan	11-	9-5	1	10
Sull-Harjo	10-	9-5	2	46
Wasutke	12-	9-5	4	2,067
Carter:				
Davis	13-	9-5	2	465
Payne	12-	9-5	3	15
Sango	1-	9-5	4	1,435
Continental:				
Kays	2-	9-5	2	145
Spencer	12-	9-5	4	1,630
Crosbie:				
Bryant	9-	9-5	2	....
Empire:				
Barker	12-	9-5	1	680
Edmondson	3-	9-5	3	648
Gypsy:				
Bora	16-	9-5	1	....
Bruner	10-	9-5	4	2,880
B. Carter	11-	9-5	9	3,017
Earl	16-	9-5	1	20
Hunick	5-	9-5	1	2,060
Noble	12-	9-5	4	3,465
Peter	10-	9-5	3	220
Sango	1-	9-5	5	4,002
State	16-	9-5	4	972
Independent:				
Bruner	10-	9-5	4	387
Sullivan	10-	9-5	3	87
Knapp	8-	9-5	4	1,998
Independent-Margay:				
Gains	11-	9-5	4	955
Interocean:				
Payne	12-	9-5	1	....
Magnolia:				
Bryant	9-	9-5	6	920
Cowden	4-	9-5	4	75
Dixon	12-	9-5	1	....
Edmondson	3-	9-5	3	30
Holmsley	11-	9-5	8	1,446
Hyde	13-	9-5	1	1,733
Ingram	10-	9-5	1	30
Lena	10-	9-5	3	75
Seay	12-	9-5	9	3,938
Simpson	10-	9-5	3	226
Sparks	11-	9-5	7	615
Sullivan	12-	9-5	3	115
Mid-Continent:				
McCumber	9-	9-5	7	410
Mid-Kansas:				
Anderson	14-	9-5	3	140
Phillips:				
Dunaway	14-	9-5	1	30
Gram	9-	9-5	4	132
Prairie:				
Baker	24-	9-5	1	50
Davis	13-	9-5	5	3,545
C. Graham	3-	9-5	2	35
O. Graham	10-	9-5	4	1,280
Stidham	11-	9-5	13	4,445
Roxana:				
Bayless	17-	9-5	1	12
Spencer	12-	9-5	2	1,420
Shaffer:				
Clark	1-	9-5	5	966
Sinclair:				
Foreman	18-	9-5	1	15
Hollins	12-	9-5	2	....
Sango	2-	9-5	3	4,550
Skelly:				
Sherry	6-	9-6	1	163
Spencer	12-	9-5	1	155
Superior:				
Walker	2-	9-5	1	5,154
Texas:				
Anderson	2-	9-5	7	475
Brown	10-	9-5	8	1,905
Rogers	5-	9-5	4	3,685
Wilmott	10-	9-5	7	780
Tidal:				
Watkins	9-	9-5	8	3,215
Twin States:				
Barker	12-	9-5	3	145
Hern	2-	9-5	4	1,555
Total			285	95,541

Seminole Pool

Amerada:				
Fixico	23-	9-6	4	1,048
Killingsworth	23-	9-6	4	476
Rentie	23-	9-6	3	590
Atlantic:				
N. Cudjo	35-	9-6	3	320
Barnsdall:				
Carter	24-	9-6	8	941
Henry	14-	9-6	2	545
Jones	34-	9-6	4	1,150
Carter Oil:				
B. Carter	24-	9-6	2	160
F. Carter	23-	9-6	3	90
J. Carter	24-	9-6	3	25
Creamer	34-	9-6	2	30
R. Cudjo	35-	9-6	4	150
W. Cudjo	34-	9-6	1	30
Gilliland	27-	9-6	1	360
Grisso	23-	9-6	5	525
M. Grisso	15-	9-6	1	265
G. F. Killings	14-	9-6	4	415
M. E. Killings	23-	9-6	12	5,340
Knapp	13-	9-6	3	55
Lukes	27-	9-6	6	1,180
Pounder	34-	9-6	2	40
Simpson	35-	9-6	2	40
Strothers	34-	9-6	4	390
Vierson	23-	9-6	2	320
Empire:				
Gross	25-	9-6	3	72
Wilson	34-	9-6	2	264
Gypsy:				
Butler	35-	9-6	4	562
Carter	24-	9-6	8	525
Cudjo	34-	9-6	5	482
Fixico	26-	9-6	7	245
Harjo	25-	9-6	3	1,000

Wolfe	26- 9-6	6	242
Independent:			
P. Fixico	23- 9-6	2	420
Harjo	25- 9-6	2	190
Butler	35- 9-6	3	775
T. Fixico	26- 9-6	8	679
Jones	26- 9-6	4	548
I. T. I. O.:			
Allen	25- 9-6	2	43
Bowlegs	26- 9-6	12	2,867
Goodin	23- 9-6	4	357
Harjo	23- 9-6	3	94
James	24- 9-6	2	257
Reed	24- 9-6	1	....
Kingwood:			
Johnson	22- 9-6	3	1,290
Magnolia:			
Boren	2- 8-6	1	16
Franks	25- 9-6	4	716
Mid-Continent:			
Rentie	14- 9-6	9	700
Tayeche	24- 9-6	7	250
Mid-Kansas:			
Johnson	25- 9-6	1	25
Phillips:			
Strothers	27- 9-6	2	165
Prairie:			
Gross	25- 9-6	5	105
Mason	36- 9-6	1	75
Spencer	13- 9-6	1	12
Strothers	27- 9-6	8	1,405
Pure Oil:			
Strothers	26- 9-6	17	5,953
B. Strothers	36- 9-6	5	1,671
C. Strothers	34- 9-6	1	550
Roxana:			
Harber	22- 9-6	2	259
Lasley	22- 9-6	2	23
Sinclair:			
Carter	13- 9-6	2	25
Cudjo "A"	35- 9-6	6	945
Cudjo "B"	35- 9-6	4	1,200
Dicey	22- 9-6	2	1,220
Fixico	23- 9-6	4	715
Slick:			
Cudjo	35- 9-6	3	614
Franks	35- 9-6	7	1,911
Giblet	35- 9-6	3	1,704
Tiger	1- 8-6	1	56
Superior:			
Cudjo	35- 9-6	4	467
Texas:			
Mayhue	14- 9-6	1	300
Strothers	2- 9-6	1	135
Tidal:			
Carter	24- 9-6	4	680
Fixico	26- 9-6	6	1,100
Harjo	25- 9-6	3	715
T. Harjo	23- 9-6	6	130
Mahardy	24- 9-6	2	26
Turman:			
Cudjo	35- 9-6	4	1,069
Grisso	35- 9-6	1	248
Jones	34- 9-6	4	1,341
Total		304	52,224

Searight Pool

Amerada:			
Johnson	4- 9-6	1	65
Strothers	3- 9-6	2	1,057
Carter:			
Davis	4- 9-6	6	940
Frazier	3- 9-6	6	2,640
Johnson	3- 9-6	1	1
Kiker	2- 9-6	1	25
Mandler	3- 9-6	2	20
Scott	26-10-6	1	20
Gypsy:			
Cudjo	4- 9-6	3	722
Mid-Continent:			
Grayson	34-10-6	6	50
Davis	33-10-6	4	810
Pine:			
Lula	4- 9-6	1	25
Prairie:			
Cannon	33-10-6	1	....
J. Carter	10- 9-6	1	15
Houch	33-10-6	1	4
Kincaid	33-10-6	5	45
Varnum	5- 9-6	1	30
Wimer	22-10-6	1	20
Pure:			
Aldridge	3- 9-6	4	2,760
Roxana:			
Strothers	3- 9-6	4	1,210
Sinclair:			
Polly	3- 9-6	4	1,800
Superior:			
Varnum	4- 9-6	1	54
Texas:			
Fleet	4- 9-6	1	40
Twin States:			
Varnum	4- 9-6	2	328
Wilcox:			
Chupco	4- 9-6	8	1,888
Total		68	14,569

Totals

Field—	Wells	Prod.
Little River	120	44,982
Maud	2	....
Bowlegs	312	67,265
Earlsboro	285	95,541
Seminole	304	52,224
Searight	68	14,569
Grand total	1,091	274,581

EMPLOYE OWNERSHIP PLAN FOR "KEY MEN"

NEW YORK, May 12.—The question of employe ownership of stock in petroleum producing, refining and marketing companies is coming in for considerable consideration on the part of executives of leading oil companies. Interest in this phase of company management and policy has been stimulated materially by the action of the board of directors of the Tide Water Associated Oil Co. in devising a plan by which a substantial number of so-called "keymen" are to be allowed to purchase common stock of the company annually over a period of 10 years in amounts based upon their annual salary and at prices fixed each year by the board of directors at somewhat less than the market price of the stock. The "keymen" are employes of the company, department executives, members of the sales force, etc., who are in a position to influence materially the profits and economies of the company. Under the plan of Tide Water Associated a minimum deduction from salary in payment of the stock is required. Application is now pending for the listing of such stock on the New York Stock Exchange as and when issued.

A feature of the annual meeting of stockholders of the Standard Oil Co. of New Jersey, scheduled for June 5, will be consideration of the proposed third stock acquisition plan of the company. The plan as formulated by the board of directors and declared by resolution of the board at its meeting April 26, last, provides for the sale of stock on favorable terms to employes of the Standard Oil Co. of New Jersey and its subsidiary companies.

SOUTHWEST TEXAS RUNS DURING PAST MONTH

SAN ANTONIO, Tex., May 12.—Production of several pools in Southwest Texas during April stood nearly stationary compared with March. The Mirando pools gained 170 bbls. daily average in April over March, due to the opening of some new producing spots that are just getting under way and which may be expected to increase considerably the runs from the Mirando area. Average daily runs from the Cole Petroleum Co.'s new field in Survey 412 in Webb County for April was 248 bbls. compared to 138 bbls. the month before. Cole Petroleum Co. has three rigs running in the field and Magnolia Petroleum Co. completed what looks like a 200 to 300-bbl. well and its first in the field, May 8, so that considerable increase may be expected in the next monthly pipe line report. The new Albercas Pool in Webb County, where the first wells were gas but lately making oil, had no place in the March pipe line runs, but in April reported an average of 40 bbls. Since then a number of new wells have been completed and some rigs are in the field and some sizeable production looks very possible. The new Kohler Pool in Duval County is still a small affair and the third well completed last month failed to make much difference in the runs. Humble Oil & Refining Co. is running one rig in the field, feeling around to find where the field is and may stumble upon bigger yields.

	April		March	
Pools—	No. Wells	Prod. Dy. Av.	No. Wells	Prod. Dy. Av.
Mirando pools	401	3,462	403	3,224
High gravity	13	87	13	89
H. W. & F.	112	530	112	592
Randado	156	1,919	154	1,923

Three wells in the Alworth Pool are included in the Randado runs, but their production is yet very small.

The new Dale Field in Caldwell County gained 118 bbls. due to new completions during the month and the other pools in the Caldwell County district have stood nearly stationary. The Bruner Field, 1 mile from Luling and which consists of but one well but with others drilling, was connected with the Magnolia Pipe Line May 4, and the runs will be a matter of record next month. Also the new Lockhart Pool, opened by the Branyon well 4 miles south of Lockhart, was connected late in the afternoon of the last day of April.

Runs from the three Caldwell County pools follow:

	April		March	
Pools—	No. Wells	Prod. Dy. Av.	No. Wells	Prod. Dy. Av.
Luling	559	13,457	558	13,918
Lytton Springs	304	1,483	304	1,484
Dale	30	1.157	26	1,039

Daily average pipe line runs of the Kingsville Field in Kleberg County were given as 315 bbls. which represents a stated regular amount the Humble Pipe Line Co. was taking from the field each day, for the production of the field has fluctuated considerably during the past two months or more, and is not representative of the daily output of the field.

Pipe line runs from Somerset, Southton, Callaham are not received till later in the month.

42,840

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The Oil and Gas Journal
TULSA, OKLA.

Gasoline Market Strong in Chicago

Low Price 7¼ Cents for U. S. Motor. Spot Demand Not So Active Monday as a Week Ago, Due to Purchases Past Two Weeks

By J. B. Waldo

CHICAGO, May 14.—The gasoline market was strong today with 7¼ cents the low price for U. S. Motor gasoline. The spot demand was not quite as active as a week ago but this would follow naturally after two weeks of such active purchasing as has taken place in this market. Many of the distributors are undoubtedly stocked ahead for several weeks. There was still a good demand for cars in transit, chiefly from the near-by dealers. The weather conditions were ideal for motoring locally and are so reported from many parts of the territory and early reports indicated that dealers had a large gallonage over the week-end. Several refiners were quoting 7¼ cents fore U. S. Motor gasoline but they were not pushing sales and in one case limited the quantity at that price to five cars to any one buyer. Exporters were also in the market, one concern offering 7¼ cents for export grade U. S. Motor gasoline for any number of cars that the owner had to sell. The natural result of this was to add to the strength of the gasoline situation here. There were no changes in the situations as to the higher gravities.

Kerosene in Demand

Kerosene was in good demand for prompt shipment and firm at unchanged prices from the close of last week. Gas oil was also very strongly held but the demand is routing. The fuel oil market was quiet on Monday with little demand and the inquiries were mostly for small quantities. The market for the heavy grades was easy in tone but quoted prices are no lower than last week. The impression was quite evident in the trade here that U. S. Motor gasoline would make another advance of not less than a quarter of a cent during the week and that the limited number of refiners asking 7¼ cents this Monday would be increased to practically all those represented here by the beginning of next week. Some of the largest buyers admit it is more difficult to buy at a concession from the full market price for large quantities right now than it has been for years at this season. Refiners and compounders report that their business in stocks and blended motor oils is good right now many showing sales much in excess of this time last year.

Demand Sustained

The demand for gasoline showed no let up last week, the spot business being fully up to that of the first week in the month and the contract business being very large. Many dealers having contracts with refiners ordered out their full allotment for the month and the number of those who are behind their contract quantities is very small. Some dealers have asked for additional quantities and others regarding the possibility of securing shipments in excess of their contracts stating they will need the gasoline if their business continues as good as it has been for the past few weeks. Much of the large consumption is doubtless due to the splendid weather which we have had practically all this season but there seems to be something more needed than good weather to give the demand for gasoline the impetus it has had this spring to date. The increased consumption of gasoline is much in excess of the added number of cars registered as reported at the beginning of the year compared with the same date a year ago. There are some suggestions that gasoline is being used more freely for other purposes than as motor fuel but neither refiners or dealers have any information that leads to any such conclusion.

Many New Dealers

The local situation is so complicated that little real insight into the demand for gasoline is to be obtained. Several distributors state that their business in and around Chicago is just about the same as last year, a little better but no great change noticeable. The reason is the number of new dispensers of motor fuel, there having been a large number of drive-in stations and garages which have been opened for business during the last 12 months. Undoubtedly this district is sharing in the general increase but the total volume is divided among a larger number of sellers. The same is true in many parts of the territory. Probably the good weather and the additional mileage of good roads is the main factor in causing the increased gallonage. An old-time resident who lived here 40 years ago said that the earlier recollection was of a saloon on every corner, then the drug stores crowded out the saloons and now it was the service stations that seemed most numerous. Many of these stations do a business and continue to survive, that is so small compared with the sales of a dozen years ago that the dealers of that time would not have considered it possible to make a profit on the small volume of business. These stations can only continue by reason of larger profits. Instead of 3 cents being considered an ample margin now the dealers insist it requires 5 cents, some of which they turn back to their customers in the form of discounts, rebates and prize packages such as auto cushions and robes. The trade has been told time and again that this method of doing business is economically unsound and will have to be changed if the situation is to become stabilized but the majority of the dealers seem wedded to their present methods.

Prices Advanced

The strength of the market was shown last week in continued advances in the price of gasoline by refiners and the continued buying by dealers at the advanced price. There are some large refiners who have been slow to increase their price and have been right along an eighth of a cent below the average price in this market. Their action has served to hold prices back a little, to slow down the advance and for this reason the higher level is the more likely to hold. Two of these refiners held their price for the U. S. Motor gasoline to 7 cents until the first of last week when they advanced to 7⅛ cents. Later they put their price at 7¼ cents. The majority of the refiners and marketers sold first at 7⅛ cents and had advanced gradually to 7⅜ cents by the close of the week with a few asking 7½ cents to all but regular customers. As the demand is large and stocks in the field have been reduced, although runs are somewhat larger, the market has a firm foundation for the advances in price. There are several import orders in the market and there has been some buying or attempts to buy by one refiner from another. In some cases this is the result of the taking of export orders. This export business has been a real relief to the market during the past month. The demand for the higher gravities has been good but not sufficient to increase the spread in prices between the U. S. Motor grade and the higher gravities.

Inquiries From the East

One rather peculiar and interesting item in the market last week was the number of inquiries for gasoline from eastern points. Some of these came from Massachusetts and other New England states, from New Jersey and eastern Pennsylvania. In each case the inquiry was for a price on a product that would equal the California gasoline in antiknock value. These came from dealers and the fair assumption is that the supply of California gasoline available on the East Coast is restricted or the price considerably higher. Prices quoted by sources of supply other than the Mid-Continent Field in Ohio and other differential points have been advanced until it is now possible for the Mid-Continent refiner to sell in these differential territories. At Cleveland the quotation last week for U. S. Motor gasoline was 11 cents delivered with a freight rate from Group 3 of 3.7 cents per gallon. Quite a bit of business was done by refiners both in this State and in the Mid-Continent Field in this differential territory.

Atlantic Seaboard Short?

These facts may indicate that the Atlantic Seaboard is short of its wanted stock of motor fuel. The consumption in that territory has been very good and further buying from that source is looked for as the yield of good gasoline from Venezuelan and West Texas crude has been stated to be less than from the crudes previously run at these refineries on the Atlantic Coast. There has been considerable discussion of the possibility of securing supplies of gasoline from some of the many refineries which have sprung up in the West Texas Field with the increased production of crude. Some samples of this gasoline here have a very pronounced and disagreeable odor and such would not be generally saleable at any price here although some of the less particular distributors might try to vend it at a cut rate. It is stated, however, that it is possible to run a good grade of motor fuel from West Texas crude and a sample shown had none of the objectionable odor and the tests showed that it was a very good motor fuel. Some additional cost would be incurred by the extra treatment necessary to remove the odor and this with the added freight would tend to offset any advantage obtained through the plentiful supply of cheap crude. There are a number of smaller refiners in the Mid-Continent Field who are looking about for a crude supply preliminary to beginning operations. One of these said last week that they could get the crude but the price was too high with the chief product at the present market level. Right now the extent of the operation of cracking plants by refiners who have a plentiful supply of crude is being closely watched as the most important factor in increasing the supply of gasoline. The sales executive of one of the largest refining organizations said last week: "The refiners have the market in their own hands," and so it would seem. Natural gasoline eased off last week in this market. It was asserted by some that the price had advanced too rapidly for the refiners to buy at the present selling price of their product.

Kerosene More Active

Kerosene was more active and decidedly strong last week rather to the surprise of many in this market who had looked for a drop in the demand after the first of the month. Farm work is stated to be from two weeks to a month later than usual and the farmers are using their tractors for long hours each day, where the soil and weather permits, to get a start with their crops as quickly as possible. There was an active demand from refiners and marketers for resale. One refiner stated he had sold quite freely to marketers at 5¼ cents. The demand was for rush shipments in nearly every instance. Prices showed an advance with a continued tendency in that direction. At the beginning of last week a very little kerosene was available at 5 cents but the offerings were fairly free at 5⅛ cents but at the close of the week the price had advanced to 5¼ cents for the low and 5½ cents asked by one refiner. Many had no kerosene to sell at present and others were holding their stocks for their regular trade. For the 42-44 gravity the price was quite generally 5¾ cents with very little available, buying was not active. The distillate demand was very light although distributors had some business from the smaller industries and an occasional car is sold for some special purpose. The price was nominally unchanged remaining at 3 cents for those who wanted the product.

Reports have been current that two of the largest eastern companies, the Standard Oil Co. of New Jersey and its subsidiary, the Standard Oil Co. of Louisiana had arranged to make two-year contracts with consumers for their supply of furnace oils in order to increase the sale of domestic oil-burning devices in their territory. This would enable the possible buyer of such a plant to arrange for his supply of fuel for two years and thus stabilize the cost of the operation of the domestic oil burner. The price at which the furnace oil was to be sold was not given and presumably it varies in different localities partly in relation to the freight costs from the refinery to the distributing point and the local costs of distribution.

Gas Oil Firm

Gas oil was very firm all last week and the supply of the straightrun product is apparently limited. Quite a number of the sources of supply that can be usually depended upon to furnish much material are sold up which may mean that they are holding what they have for their own use. The new business from the gas companies was not large last week as there is nothing in the present market to induce them to purches. They are drawing on their stocks and waiting for better prices from their standpoint. The refinery demand for straightrun gas oil is expected to show an increase and some inquiries have been received here regarding the purchase of possible quantities but they have received little encouragement as the situation is not favorable to future transactions.

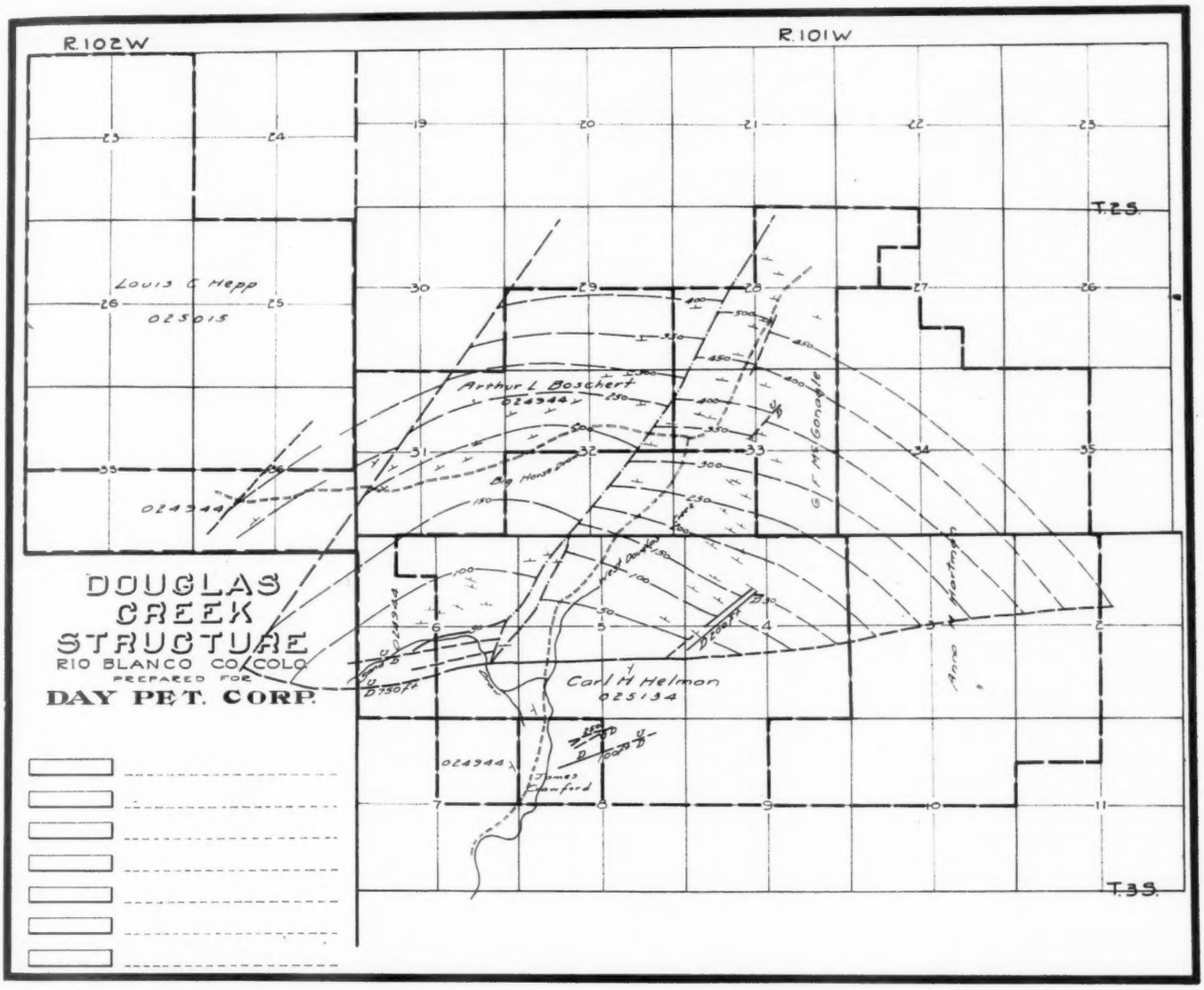
Some of the refiners who operate large cracking plants have been expected to add to their stocks by spot purchases or to contract for additional runs but apparently little has been accomplished with these buyers. The market was at the level of 2⅝ cents to the buyer practically all of last week. The growing consumption of gasoline and the increasing demand from dealers foreshadows a materially more active market for that product and to meet this demand the cracking plants will be more freely operated. This will require a further supply of gas oil of the quality that gives good results in the cracking stills, and the prospect is adding to the strength of the demand for all gravities of gas oil and to some extent of the lighter fuel oils which may be used for the production of synthetic gasoline by some of the processes. The zero gas oils are in fair demand and just about holding their own as to price.

Fuel Oils

Fuel oils have been steady in the higher gravities but weaker in the heavy grades such as the 24-26, 18-22 and lower. The higher gravities are not in large supply and there is a continuing demand for them that holds them at their present level. On the other hand the supply of

(Continued on Page 143)

DRILLING OPPORTUNITY



LOCATION

The Douglas Creek Structure is located in Northwestern Colorado within the area of active development which resulted from the discovery of large production on the Iles Dome.

STRUCTURE

The structure is a large dome faulted across the center. The area mapped above represents only the upthrow side of the fault where drilling would be about seven hundred feet shallower than the downthrow side. The map is a reconnoissance map only and is not presented as a finished survey. The topography of the area is extremely rough. The United States Geological Survey in discussing this dome estimates that its area for oil accumulation would be about two hundred square miles. The total closure has not been definitely determined but is believed to be considerably in excess of a thousand feet.

STRATIGRAPHY

The canyon formed by Douglas Creek exposes the upper measures of the Mancos shale of Cretaceous age. The walls of the canyon are formed by the Mesa Verde. The drilling objectives would be the Dakota series, Morrison and Sundance. The drilling depth to reach these objectives would be about five thousand feet. Eighteen miles north at the Rangley Anticline active drilling by three companies is in progress and several structures close by are being tested. Oil seepages occur at several places on the Douglas Creek Dome.

TRANSPORTATION, WATER AND FUEL

A road crosses the top of the fold following the course of Douglas Creek. The best location for a test well would be along this road. The creek furnishes ample water the year around, and coal is readily available all through this section.

CONCLUSIONS

The structure is large and has ample drawing ground. It is also faulted which is an advantage in this area. The topography is rough and not many drilling sites are available except along the stream courses. While the test well would be deep it is no deeper than other structures now being drilled close by by major companies. Due to faulting it is possible that oil may have migrated upward into porous members in the Mancos shale from which shallow production might be obtained. The structure justifies a test well.

TERMS

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350 H. P. Heine Water tube boiler, 202-3½"x18' tubes 2-36"x18' Horizontal steam drums, full flush front with water columns, steam gauge safety and blowoff valves, and all auxiliary fittings, oil for fuel. Mfd. by Heine Safety Boiler Works, St. Louis, Mo.

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COMPRESSORS: Gas Engine 150 H.P. twin Bessemer 14½"x20" long belt to 1-R type 10 two stage 16"x8"x16"—four @ $3,000. Direct connected type 8 Bessemer 80 H.P. 7½" compressor cylinder $1,000; Electric 50 H.P. Fairbanks 220 v. 3 ph. 50 cyc. belt and idler Worthington duplex compressor 22"x16", $3,000; Steam Duplex 1 stage 1-R type 10, 12"x23"x16" $750; 7"x11"x14" $500; Platt 10"x10"x10" $400; Steam duplex 2 stage 14"x21"x12"x20" $800; two 9"x12"x16"-x12" @ $2,025; two 8"x10½"x5½"x12 @ $1,725. Many of these are almost new. Men who know compressors could renovate any of them at great savings over new cost. Subject to prior sale. W. F. Pyne, 909 So. Ardmore Ave., Los Angeles, Calif.

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FOR SALE—EQUIPMENT

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FOR SALE—2—190 H.P. Miller Gas Engines and gas pumping plant equipment. Location Eastern Oklahoma. Nicholson Corporation, Commerce Bldg., Kansas City, Mo.

FOR SALE—3 Hooker Steam Pumps,
1—7½x4¼x10
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4,000' of 6" and 6⅝" used in a line.
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15,000 ft. 5⅜-in. used casing.
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5,000 ft. 10-in. used casing.

75,000 ft. 3-in. used line pipe.
50,000 ft. 4-in. used line pipe.
20,000 ft. 6-in. used line pipe,
For immediate shipment from our Texas yards.
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WANTED—Drilling Outfit. Good condition, complete. Itemize. State age, amount of usage, where located. Prefer 30 Star. WARD, 1020 Otis Bldg., Chicago, Ill.

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FARM IN ARKANSAS. Mr. Retired Driller, the very thing you want; nice four-room house, ten acres grapes, fruit trees, etc., pays good income. Inquire Box 3276, Tulsa, Okla.

Eastern Gasoline Resumes Advance

Motor Fuel Market Continues Strong. Kerosene Firmer and Lubricating Oils and Paraffin Higher. Gas Oil Scarce

By Special Correspondent

NEW YORK, May 12.—Motor gasoline prices resumed their advance this week, and the market continues in strong position at most East Coast points. The latest upward move was started by Sinclair, which announced advances of a quarter to a half cent per gallon at its Atlantic and Gulf Coast refinery terminals. Kerosene has developed a stronger tone, and lubricating oil prices also advanced. Refined grades of paraffin were higher, in line with recent increases in scale. Gas oil is still scarce and in strong position.

With tank wagon gasoline prices higher at several points in the Southeast this week, interest has again centered in the possibility of an increase in the tank wagon quotation in New York territory. There appears to be a very definite indication that East Coast refiners are opposed to a higher tank wagon gasoline basis until the tank car market has moved still further ahead. At present, it is felt by leaders in the industry, there is entirely too wide a margin between the tank car price and the curb price at filling stations. This has led to a tendency to equalize the situation. While this has not developed to any extent yet, the general idea seems to be to permit the filling station operator to continue on a normal margin of 3 to 4 cents a gallon, but to eliminate so far as possible the wide jobbing margin which has existed for a year or more. In other words, the refiners feel the net return on their gasoline sales has been entirely too slim, and in their campaign for gallonage they have built up a formidable "middle" interest between themselves and the filling station operators which is receiving a return out of all proportion to the service rendered.

Crude Price Discussion

The unexpressed fear which seems to be lurking in the minds of many of the executives of the larger refining companies is that recent advances in gasoline prices, particularly in Group 3 territory, may precipitate an advance in prices for high gravity crude which might still further stimulate refinery operations and possibly result in an overproduction of gasoline that would react against the market during the summer months. At the present time, it is felt, the expansion in refinery runs has created something in the nature of an artificial demand for crude oil. An advance of 25 cents a barrel in light crude, it is pointed out, will mean roughly an increase of 1 cent a gallon in the cost of gasoline production. While local interests close to the crude oil situation profess to be without definite information of any pending advance, it seems to be generally felt that a 7½ or 7¾-cent market for U. S. Motor at Oklahoma refiners will probably be accompanied by a higher market for crude.

The cut of 1 cent a gallon in service station gasoline prices in Pennsylvania and Delaware during the week is seen in the trade as a definite effort to narrow the spread between the tank car and curb prices of gasoline. This was the first general cut in the East for some time, and the trade sees particular significance in the fact that it was confined to service station prices. With refinery and tank car prices advancing, and service station prices steady, or lower, independent operators have less opportunity to undersell the larger marketers, and the possibility of price wars during the season of heaviest consumption is thus minimized.

Gasoline

The latest upward movement in motor gasoline prices in the East was launched by Sinclair, which on May 11 announced advances ranging from a quarter to a half cent in its prices at Atlantic and Gulf Coast terminals. Sinclair's new prices are 9 cents a gallon at Houston and New Orleans, 9½ cents at Tampa, 9¾ cents at Jacksonville, 10 cents at Charleston, 10¼ cents at Portsmouth, Philadelphia and New York, and 10¾ cents at Tiverton. At the time of writing, other refiners had not followed in the Sinclair advance although it appeared probable others would advance at least a quarter cent here, if not a full half cent to put their prices on a parity with the Sinclair schedule

Although weather conditions over East Coast territory during the week have not been entirely favorable for heavy gasoline consumption, the volume of refiners' sales, in the aggregate, has held up very well. Jobbers have made large commitments for May delivery at 9¾ cents and thus far there is no evidence of any slowing up in the withdrawals against these orders. In addition, many jobbers who did not cover heavily on contract have been supporting the spot market strongly, and the higher prices indicated for the remainder of the month precipitated a heavy buying movement on the part of distributors who had not previously covered for May, the delay of other refiners in following in the advance permitting such buyers, in many cases, to come in and cover.

California gasoline has been well maintained, and the quarter cent premium on some grades of California motor gas, established by two sellers, has been maintained. This gasoline is still being very largely used in ethyl and other special blends, and it is understood larger quantities are scheduled to come forward on contracts for summer deliveries.

Export gasoline demand has picked up this week, and the market is higher at the Gulf, with quotations at East Coast export terminals firmly held. More inquiries have been received from the Continent, and refiners are looking for a heavy movement of gasoline abroad over the remainder of the month.

Kerosene

Demand for kerosene has been well maintained this week, and the market is somewhat stronger in some quarters. Refiners who had been booking business at a quarter cent under the 7½-cent market established on 41-43 by the largest refiner in this territory brought their quotations up to the 7½-cent level during the week. Production of kerosene has not been excessive in the East during recent months, and stocks in the hands of refiners are by no means large for this season. There has been a better export demand reported, and domestic demand has continued to run at levels considerably ahead of refiners' anticipations in many cases.

The kerosene tank wagon situation in the East is strong. With refinery quotations moving upward, it is not expected anything in the nature of a seasonal cut in the tank wagon list will be seen for some time. On the contrary, if the present trend of prices in tank car markets continues, the tank wagon schedule might be expected to move the other way. Refiners have maintained the tank wagon market at 15 cents for months past and have been getting a consistently good demand for the product. The buying movement shows no signs of subsiding, notwithstanding the lateness of the season, although some slackening can logically be looked for in the near future.

Low-Price Contracts

The strength in gasoline jobbing and tank wagon markets during the past few months has attracted attention to the plight of a few of the large refining and marketing companies who are still reported to be carrying some old contracts with distributors which do not jibe with present costs.

Refiners have permitted these old contracts to expire without renewal in practically all cases, but several large East Coast refiners are still working on old contracts which have some time to run. All these contracts are extremely favorable from the buyers' point of view, but just the reverse from the refiners.

Placed at Disadvantage

For example, the current tank wagon quotation of 17 cents is coming into its own again after more than a year during which the tank wagon basis was observed more generally in the breach than the observance, in making contract sales. It is reported sellers in some instances are still carrying term contracts under which they are obligated to deliver U S. Motor gasoline at 5½ cents under the published tank wagon quotation, which means an 11½-cent price. Other contracts, it is understood, call for deliveries of motor gasoline at as low as 11 cents. Current business with station operators is not being generally written under 15 cents in most instances, with the 17-cent price reported adhered to in some sales. As the position of the wholesale market improves, the refiners holding the low-priced contracts are placed at a still further disadvantage.

It is by no means only the small companies who are "hooked" with these low-price contracts. In most instances, it is said, the shoe is on the other foot, a few of the large companies "holding the bag," while the smaller operators are able to obtain better prices on current sales. Stronger price views on the part of some of the smaller operators have been particularly noticeable.

Competitive conditions among local refiners have been anything but satisfactory during the past year. Profit has been sacrificed for gallonage, and no one has been safe from a raid for accounts from a competitor. During recent months, there has been a gradual change in sentiment, and it is reported leaders in the field are more inclined toward favoring a "live and let live" policy. This reported sentiment has not been translated into a definite sales policy on the part of all of the larger factors yet, although notable progress has been made.

New Selling Policies

A number of the service station operators, who have been selling at low prices during the past year, are now finding it necessary to radically adjust their selling policies. A few operators took a long profit on their gallonage, and sold standard brands of gasoline costing them anywhere from 11 to 13 cents at 18 or 19 cents. Many, however, cut their own prices in line with the concessions offered them by the refiners, and retailed gasoline at from 12 to 15 cents. With gasoline which formerly cost them 11 cents now unavailable under 15 cents, these operators have found it necessary to mark up their retail prices sharply, and are having some difficulty in getting their clientele reconciled to the change.

The distributing trade in general seems to be expecting an upward revision in the tank wagon price basis, which would be a material aid to all factors in bringing about a more effective price realignment. Leading refiners and marketers have succeeded in working up their prices to a rather uniform basis throughout the territory, and points at which prices were substantially under the general level have been brought up to par. With the market structure strengthened to this extent, it is felt it is but a matter of time before the open market basis is readjusted to a level more in line with recent advances in motor gasoline prices at the principal refinery points.

Fuel Oil

The 10-cent reduction in bunker fuel oil last week, bringing the market down to $1.25 per barrel, has failed to stimulate the demand for fuel oil to any appreciable extent Business has continued along routine lines. Just what was behind the cut is not yet clear, unless East Coast refiners felt that by keeping the market at a low level they would keep out fuel oil from other territories. This theory does not hold water, however, when it is remembered there has been an absence of competition along the lines of price cutting during recent months, and contracts for the big steamship tonnage are out of the way for the year.

One well-posted operator, discussing the fuel oil situation, said: "The refiners certainly can't be making much, if anything, on fuel oil at $1.25. In my opinion, fuel oil ceases to be a profitable item under $1.45 a barrel. Of course, there is a large percentage of fuel oil in West Texas and Venezuelan crude which is now being run so largely, but this should not mean that the fuel oil must necessarily be given away. The refiners when they sell bunker oil under $1.45 a barrel are just making the steamship companies a present of the difference. The big steamship operators can burn fuel oil profitably, as opposed to coal, at $1.45 per barrel and possibly even 10 cents over this figure. The larger factors in fuel oil seemed to have the market situation well under control, both as to supply and prices, prior to the price cut, and nothing appears on the surface of the market to justify the lower market."

At $1.25 a barrel, it does not appear that the refiners along the East Coast have any outside competition to fear for their current business.

One view of the fuel oil situation expressed here is that the oil companies are getting West Texas crude for a good deal under the posted prices, and thus are able to sell fuel oil profitably even at the current low price. It is known that large quantities of West Texas crude are being purchased at 60 cents a barrel, and reports in some quarters here indicate that some contracts have been entered into whereby refiners are getting crude from West Texas fields at as low as 30 cents a barrel.

Gas Oil

Firmness continues to characterize the gas oil market, and refiners quote 28 degrees gravity and higher at 5¼ cents at Bayonne refineries. Deliveries on contracts are heavy, but there is very little oil offering.

East Coast refiners this year, it is understood, are building up their summer gasoline reserve by laying aside large quantities of gas oil in storage as cracking stock. Gas oil content in current crude being run is not large While no definite statistics regarding gas oil holdings at East Coast refineries are available, it is not believed the quantity is large, and refiners continue to add to their stocks whenever possible.

Thus far, the situation in this territory has not yet reached the point where refiners have gone into Mid-Continent markets for additional stocks of gas oil, although such a contingency, according to current reports, is by no means remote.

Diesel Oil

The market remains at $2 a barrel at Bayonne, and has held up much better thus far in the year than has been the case with bunker fuel oil. Refiners are devoting more attention to their Diesel

business, and steady expansion in consumption is being witnessed.

There is a very pronounced trend toward Diesel engines in both freight and passenger vessels, and some large pleasure craft are also being Diesel powered. In fact, a definite trend toward the use of Diesel engines in practically all classes of shipping is in evidence.

Refiners expect a steady market for Diesel oil over the summer months, notwithstanding any further fluctuations which may develop in bunker C fuel.

Lubricating Oils

Prices moved upward on a number of grades for export this week and the market has taken on considerable activity. There has been a definite easing off in selling pressure on spot oils, and with refiners' prices showing more strength the jobbing trade is covering in a larger way.

The market for 600 steam refined cylinder stock is a quarter-cent higher at 17 cents, with 635 steam refined a quarter cent up at 18¼ cents, and 650 steam refined up to 20 cents. An advance of 1 cent on 600 flash Pennsylvania oil has brought the market up to 23 cents here. Bright stock has shared in the advance, light 135 being 1 cent higher at 38 cents and dark showing a corresponding gain to 35½ cents.

Paraffin oils have been without price changes during the week, but the demand has developed materially and refiners reported shipments thus far in May to be running well ahead of last month's totals.

Export inquiry for lubs has picked up during the week and inquiries for sizeable blocks are again in the market. In addition to this class of buying, the domestic trade has also been operating more heavily, particularly on motor grades.

Improvement in the demand for textile lubs has been slow and the continuance of the operatives' strike at New Bedford has made for a dull market for spindle oils used by the fine cotton goods industry.

Furnace Oil

The trade is lining up furnace oil contract business for next fall. Prices are a little lower than last year, with contracts reported going out to consumers at 7½ to 8 cents, delivered, for oil for use in furnaces in private homes. Lower prices named by most of the operators has tended to speed up the buying somewhat, and it is expected a heavy volume will be booked over the summer season.

Paraffin Wax

Prices for refined grades have moved up in sympathy with recent advances in scale. The market on 120-122 a.m.p. is now quoted at 4⅛ cents, an advance of one-eighth cent per pound, with 125-127 quoted at 4⅜ cents, also up one-eighth cent. The market for 135-137 a.m.p. is still in strong position, as a result of the current shortage of this grade, with the market little better than nominal at 6¼ cents a pound.

No appreciable increase in inquiry has accompanied the current upward move in paraffin, and buyers have shown little disposition to cover ahead to any extent. Sellers report this hesitant buying tendency applies to export buyers as well as the domestic trade.

Refiners are evidently still bullish on wax, and very little paraffin is being offered for later delivery at the current basis. The refiners are selling in the spot market in fair quantities, but are reluctant to consider term contract business while the market remains in its present unsettled position.

Petrolatum

Business in lily white at 8 cents a pound has been good this week and the market is holding fairly steady at this figure. Snow white, which is held at a half-cent over the quotation for lily, has likewise come in for a fair amount of buying. Dark green is still held at 2 cents a pound at Bayonne, with export buyers looking for stocks at one-eighth cent under this figure. Cream continues quoted at 6⅜ cents, with the amount of business reported fairly large.

Domestic buyers have been increasing their spot purchases to some extent during recent weeks and refiners are now making deliveries on contracts in good volume. Export demand has also shown a little expansion this month, with the refiners looking for further improvement in this direction.

Exports

There has been a little better inquiry for export gasoline and kerosene in the market this week, but no cargo lots are specified and it is still mostly small business.

Prices on all grades of export naphtha at the Gulf are a little firmer, but with this exception the gasoline market has showed no change in regard to the export end of the business.

Lubricating oil for export has sold in better quantities and the market is quoted at higher levels.

Principal Exports

The following table shows principal exports of petroleum and refined products from New York during the past three weeks (all figures in gallons unless otherwise noted):

	Week Ended—		
	May 4	April 27	April 20
Gasoline	774,485	1,138,250	1,710,961
Kerosene	194,250	1,063,000	1,179,000
Naphtha	1,036,500	140,500	3,946,800
Fuel oil	...	2,172,084	149,300
Lubricating oil	850,100	1,388,450	1,499,000
Petroleum (refined)	2,431,900	476,980	2,285,500
Pounds—			
Petrolatum	175,000	46,643	125,500
Paraffin wax	2,110,300	834,800	1,166,700
Refined	858,900	29,500	
Scale	879,700	1,243,800	676,900

Included in the kerosene exports was a shipment of 100,000 gallons on the Tintoretto for Santos and one of 50,000 gallons on the Satartia for Rosario. Gasoline exports included 100,000 gallons on the Tintoretto for Santos, 100,000 gallons on the Tijuca for Montevideo, 100,000 gallons on the Satartia for Santos, 90,000 gallons on the same vessel for Pelotos, 150,000 gallons, same vessel, for La Plata, 101,000 gallons, same vessel, for Rosario. Naphtha exports included a shipment of 64,000 gallons on the Baracoo for Accra, 91,500 gallons on the same vessel for Dakar, and 73,000 gallons on the Tijuca for Montevideo. The Barracoo carried altogether 477,434 gallons of naphtha. The Padnsay, sailing during the week, carried 401,000 gallons of naphtha for various ports. Among the larger lubricating oil exports during the week were the following: 47,300 gallons on the Satartia for Sao Paulo; 23,835 gallons on the Eastern Dawn for Antwerp; 22,000 gallons on the Javanese Prince for Yokohama; 36,540 gallons on the Javanese Prince for Kobe; 35,700 gallons on the Saco for Antwerp; 21,840 gallons on the Ansonia for London; 46,010 gallons on the Tijuca for Buenos Aires; 32,425 gallons on the Bali for Sourabaya; 37,050 gallons on the Veendam for Rotterdam; 30,425 gallons on the Eastern Glen for Algoa Bay; 21,210 gallons on the Westphalia for Hamburg, and 21,961 gallons on the Ascania for London. A shipment of 123,108 pounds of petrolatum left on the Ansonia for London, and one of 40,342 pounds on the American Merchant for London. Exports of refined petroleum of more than ordinary quantity included the following: 870 000 gallons on the Speybank for Illollo or Zamboanga or Davao; 125,000 gallons on the West Honaker for Brisbane; 150,000 gallons on the same vessel for Adelaide; 69,670 gallons on the Satartia for La Plata; 100,000 gallons on the Tyruca for Montevideo; 85,000 gallons on the Padnsay for Bathurst; 101,500 gallons on the Eastern Glen for Durban; 101,500 gallons on the same vessel for Lourenco Marques, and 60,000 gallons on the Barracoo for Las Palmas. Paraffin wax exports included 194,069 pounds on the Eastern Dawn for Antwerp; 204,600 pounds on the Forreshank for Fusanor Mokpo; 555 500 pounds on the Santa Ana for Talcahuano; 111,100 pounds on the same vessel for Santiago; 482,200 pounds on the Alberta for Venice, and 142,000 pounds on the Tolsa for Port Limon. Refined paraffin exports included 847,791 pounds on the William Penn for Shanghai. Included in export shipments of scale paraffin were 352,539 pounds on the Grippsholm for Gothenburg, and 194,069 pounds on the Eastern Dawn for Antwerp.

California Oil Receipts

Receipts of California crude and refined oils at Atlantic and Gulf Coast ports for the week ending May 5 totaled 600,000 bbls., a daily average of 85,714 bbls., against 245,000 bbls., a daily average of 35,000 bbls. for the week ended April 28.

	42-gal. bbls.
At Atlantic Coast Ports—	
Baltimore	70,000
Boston	
New York	248,000
Philadelphia	282,000
Others	
Total	600,000
Daily average	85,714
At Gulf Coast Ports—	
Daily average	
Total Atlantic and Gulf Coast Ports	600,000
Daily average	85,714

Distribution of total California receipts is as follows:

Crude	90,000
Gasoline	345,000
Kerosene	
Gas Oil	165,000
Fuel oil	
Lubricants	
Total	600,000

Imports of Petroleum

Imports of crude and refined oils at the principal United States ports for the week ended May 5 totaled 1,818,000 bbls., a daily average of 259,714 bbls., against 1,332,000 bbls., a daily average of 190,286 bbls. for the week ended April 28.

	42-gal. bbls.
At Atlantic Coast Ports—	
Baltimore	323,000
Boston	
New York	467,000
Philadelphia	395,000
Others	406,000
Total	1,591,000
Daily average	227,285
At Gulf Coast Ports—	
Galveston district	
New Orleans and Baton Rouge	187,000
Port Arthur and Sabine district	
Tampa	40,000
Total	227,000
Daily average	32,420
At All United States Ports—	
Total	1,818,000
Daily average	259,714

GASOLINE MARKET IS STRONG IN CHICAGO

(Continued from Page 138)

the heavier grades is very ample and they are being freely offered at prices that would indicate the refiners were anxious to reduce their holdings. Possibly some of this desire is due to the competition from the West Texas oils. There is a great difference of opinion even among the fuel oil men as to the place in the industry of these fuel oils from West Texas. Some believe they will not be largely used, others point to the introduction of Smackover oil as a fuel, how it was laughed at and pronounced unfit to burn under a decent boiler but finally became a favored product. Those who favor the West Texas fuel oils believe something the same line will take place with these new oils and that consumers will find a way to use them.

There is quite a wide variety of fuel oils now being offered from the different fields and by different refiners and producers. They have a varying characteristics but most of them are open to the common objection of considerable sulphur content and a disagreeable odor. But a vast quantity of fuel oil recovered from West Texas crude was sold here last winter and it was found desirable on account of its low pour test and usable in spite of its odor which could be greatly reduced by a simple process. It might be also said that the local refinery that operated for months on McCamey crude from Texas and sold so much fuel oil with the low pour test also had a good yield of gasoline of standard quality from this crude. The Group 3 refiner has this competition to meet and that it was very real competition was shown by the amount of the business that was turned to the group refiners when the local plant temporarily discontinued running this McCamey crude.

Lower Gravities Decline

The price on the lower gravities of fuel oils declined last week almost continuously and at the close buyers were placing orders at 72½ cents for the 18-22 gravity and at 77½ cents for the 24-26 gravity when they were willing to buy. Some business went at even lower prices and one large buyer stated he had a quotation of 68 cents for 18-22 fuel oil from a Kansas refiner direct. There are some points in Kansas that enjoy a 2-cent differential to certain delivery points and Chicago is one of these points. This might account for the low price quoted but it evidenced a desire for business. The buyer stated he had not bought but was still waiting for other quotations. This could not be fairly accepted as a market price but it indicates the trend of the heavy oils. There is today little if any premium paid for pour tests in ordinary fuel oils. There has been a good deal of complaint regarding the quality of the fuel oils supplied and some buyers are becoming very particular regarding the oils supplied and prefer those from certain sources. The demand continues to be largely of the hand to mouth variety with much stress on the price paid when the order is placed and much complaint on the kind of oil when the order is filled. Better-than-average oil still secures a better than-average price and refiners might help their fuel oil sales by care in the quality of their oils and by maintaining a standard long enough to secure a reputation for their product.

Lubs in Demand

Lubricating oils are in demand but the price situation is still complained of especially as regards bright stocks. Motor oils are active. Industrial specialties are also in good demand.

Through several southern states the tank wagon price has been advanced 1 cent. The Atlantic Refining Co. reduced the spread between the tank wagon and the station price 1 cent by reducing the station price that amount, which had the appearance of a price cut until the explanation was made. In this territory the tank wagon price has been restored to normal at several points not many of them of prime importance except to the local dealers, the results being a gradual evening up of the price scale over this territory. There are some sections where there is more work to be done. There are many rumors of tank wagon advances over this territory but the wish is evidently father to the expressed hope. The present seems to be hardly a logical time for the change. One piece of advice is being given by the manager of a large oil company to its retail customers, to rid themselves of contracts calling for the giving of discounts that would not be possible when the margin is reduced to not over 4 cents per gallon and to try to sell at a better margin, not to aim for volume and trust that the profit may prove adequate.

MARLAND RE-ELECTED DIRECTORS CUT TO 15

PONCA CITY, May 12.—Results of the election of the Marland Oil Co., held in New York, were announced from the Marland offices here.

E. W. Marland was re-elected president and W. H. McFadden, Frank R. Kenney, C. C. Brown and George Marland were re-elected vice presidents.

Arthur Lawrence of New York was elected a member of the executive committee to succeed the late Charles Smithers.

C. C. Brown was chosen as general manager of the Marland Mid-Continent subsidiaries, succeeding W. H. McFadden, who resigned several months ago.

The directorate of the Marland Oil Co. was reduced from 23 to 15 members at the stockholders' annual meeting at Wilmington, Del. The new board will be composed of E. W. Marland, W. H. McFadden, George Whitney, W. C. Potter, Vernon F. Taylor, Arthur B. Lawrence, F. R. Kenney, C. C. Brown, G. R. Marland, Walter Miller, G. G. Shallenberger, C. N. Westfal, H. P. Snyder, A. R. Brunker and E. N. Potter.

These directors were all members of the old board with the exception of Mr. Lawrence. He is a member of the F. S. Smithers Co. of New York. C. C. Stephenson remains as secretary of the company and John E. Hall will continue as secretary to Mr. Marland, but neither was re-elected to the board.

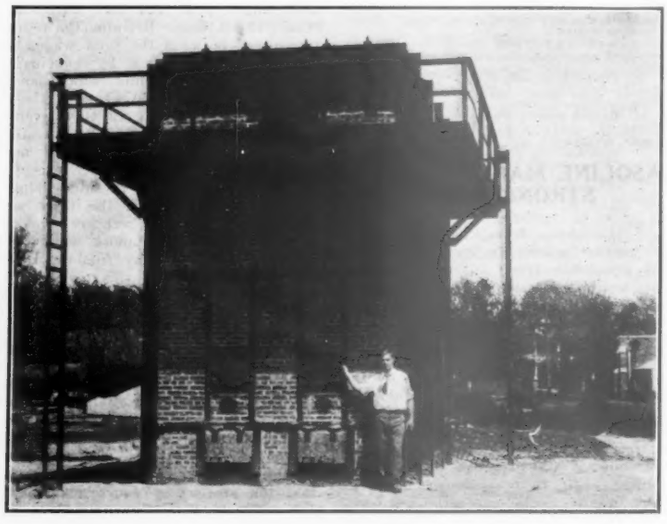
School Builds Experimental Refinery

Oklahoma University Erecting Complete Unit Having 300-Bbl. Capacity. To Be Used in Practical and Experimental Work

By W. T. Ziegenhain

NORMAN, Okla., May 11.—Within the next three months the Oklahoma State University at Norman will have a complete air and gas lift production unit and a complete skimming plant in operation. It is the object of the petroleum engineering division of the school to add facilities in the near future which will allow for the practical study of production and refining practices from the time the well site is chosen until the finished refinery products are ready to be placed on the market.

In addition to the practical value of this equipment in the training of the men in the petroleum engineering classes it will afford a greater opportunity for research. All of the equipment is large enough to yield data indicative of what would be expected in a commercial operation. This will allow the students to become fully acquainted with actual operating practices and will tend to create a greater confidence in themselves when they go into the field or into a refinery to operate commercial-size equipment.



Recently completed 300-barrel pipe still on school grounds with unassembled 90-foot fractionating tower in the background.

Production Methods

A 96-foot derrick has been assembled for the study of production methods. Compressors, lines, separators, and tanks are being placed and connected to form a complete air and gas lift production unit. Six platforms have been built into the derrick at different levels that will allow for studying pressure drops, consistency of flow and temperature changes. The flow of the oil will be actually seen at these levels through heavy tubes that have been made a part of the flow line at these different levels. In the accompanying picture the derrick and platforms are shown. The supply tank, separators, and auxiliary equipment also are shown. The compressors and pumps are housed in a permanent brick building to the left of the derrick as shown in the picture and the complete unit will be typical of the most modern and economical practices.

The supply of oil will come from a tank and conditions will be made as near those existing in the field as possible. A Wilcox sand will be used as the holding medium for the oil and the initial experiments will be made on Seminole crude. In the future a drilling rig will be added and actual operation started on a well. Many specimens of casing, tools, and fittings are on the ground to complete the story of production and are being made of great value in the practical phase of production engineering.

Refinery Equipment

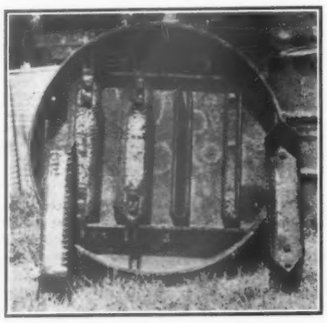
A modern pipe still capable of handling at least 300 bbls. of crude daily has been erected on the refinery site and immediately behind the still the concrete foundation has been poured preparatory to the assembly of a 90-foot bubble cap tower capable of making a complete separation of gasoline, kerosene, distillate gas oil, lubricating oil stock and fuel oil during the initial distillation of the crude.

The unassembled tower may be seen in the accompanying picture just behind the pipe still. It will be filled with bubble cap sections, a picture of one of these also being shown. Each bubble cap section includes a tray, four caps and a steel ring support separating one tray from the other. The caps are made of relatively heavy iron sheeting and may be easily removed for cleaning. If replacements are necessary, the new caps may be easily set in place. Each tray is approximately 3 feet in diameter and will hold about 1 inch of liquid as the fractionating medium. The saw edge along the sides of the base of each cap provides an outlet for the vapors as they come up through the tower and this arrangement is very efficient in that it permits a wide distribution of the vapors by breaking the flow into many small gas trains as the vapors bubble through the liquid in passing from one tray to the other. Pipe connections are provided for on the respective trays to facilitate taking off a fraction at practically any point in the tower. A completely fractionated gasoline will be taken off of the first sections and the other products will be recovered in their order. All products manufactured will be consumed at the school or will be returned to the organization supplying the crude oil. It is not the intention of the school to have these offered on the market in competition with established refiners.

Overhead Lubricants

Considerable work will be done in developing the manufacture of heavy overhead lubricants. It is thought possible that a lubricating oil of 100 viscosity at 210 degrees Fahrenheit may be taken from the crude as an overhead cut without cracking or redistillation. This of course not only involves the vaporizing and recovery of these high boiling-point fractions but these operations must be carried out so as to render the oil fit for further processing.

To facilitate this as well as to aid the control of the processing in general a complete and commercial sized system of gauges, indicators, etc., have been supplied. In appearance and in practice there will be nothing lacking from the standpoint of control when the unit is placed in operation.



One of the bubble cap plates showing the removable caps.

Similar drilling and control units are in operation at large refineries and while the work to be undertaken by the school will necessarily be a duplication of the operations already in general use to start with, modifications of these practices will be made later in an effort to improve them. This will involve testing out new equipment, designing new equipment and the investigation of the effect on varying the operating temperatures, pressures, etc.

Long Operation

This phase of the work will involve comparatively long periods of operation and the students will get a real taste of refining. Three shifts will be placed on duty just as in the regular refinery work and while there will be ample supervision at all times, it will tend to bring the student more closely to the practical operating problems and will instill a lasting feeling of confidence when he is placed in the same position after getting into the commercial plant.

It is the opinion of the department heads that practical training must be made an essential part of the petroleum engineering training regardless of the branch chosen and with this in mind, new equipment will be added from time to time.

The next project to be undertaken is the erection of a refrigerating plant where the lubricating stocks may be dewaxed. This will open the possibility of study for many problems. Considerable attention has been given to the processing of gasoline, kerosene and the light oils in the past and over the next few years it is probable that attention will be equally centered on the processing of lubricating oils.

The refining division of the school now has several problems under way in connection with the fractional crystallization of wax and this problem may be linked with that of the manufacture of lubricants. Another problem under investigation is that of treating. The vapor phase treatment of gasoline and kerosene is being studied both with respect to increasing the efficiency of the operation through getting an improved product but revivifying the earth through the use of solvents, etc., without removing the earth from the tower.

Fellowships have been granted by refiners and equipment manufacturers to carry out these special studies and as the new equipment is made available it is the object of the school to extend the use of these facilities to take on new assignments. Much of the credit due the school and the petroleum engineering department for the progress in the securing of

A standard derrick on the university grounds for air and gas lift study.

this equipment and the enlargement of the courses may be given to H. C. George, director of the school of petroleum engineering; Fred W. Padgett, head of the department of refinery engineering and gasoline manufacture and to W. F. Cloud, head of the department of production and development.

WEST TEXAS FIELDS

(Continued from Page 40)

Lease No. 1, located in Section 34, Block 194, T.C R.R. Survey, topped the pay at 1,109 feet and drilled to the total depth of 1,125 feet in lime flowing 360 bbls. per hour and increased to 3,148 bbls. in 50 minutes at total depth.

Taylor County

Doring & Perrine's No. 1 J. A. Hammer, located in the center of north 100 acres in Section 23, Block 19, T.&P.R.R. Survey, elevation 1,904 feet was temporarily abandoned at 455 feet. Gilbert Johnson & Day Brothers' No. 1 C. M. Brown, located in Section 1, Block 6, T.&P.R.R. Survey, was dry and abandoned at 3,003 feet.

Tom Green County

Marland Oil Co 's No. 1 J. W. Johnson-A, located in J. Hendrick Survey No. 537, was dry and abandoned at 3,417 feet.

Upton County

The Texas Company and Cordova Union Co.'s No. 1 Union Land Co., located in Section 23, Block 35, H.&T.C. R.R. Survey, was drilled to a total depth of 3,201 feet and plugged back to 2,270-75 feet, where the top of the pay was encountered and had an initial production of 25 bbls. on pump.

Val Verde County

Magnolia Petroleum Co.'s No. 1 Whitehead, located in Section 81 D.G.C.&S.F. R.R. Survey, elevation, 1,770 feet was dry and abandoned at 6,725 feet.

Winkler County

Atlantic Oil Producing Co.'s No. 1 Hendricks-C, located in the SW cor. of Section 40, Block B-5, was drilled to a total depth of 2,978 feet with an initial production estimated to be 10,000 bbls., 5 per cent water and b.s. Humble Oil & Refining Co.'s No. 3 Grisham-Hunter, located in Section 34, Block B-5, was drilled to a depth of 2,898 feet and made gas for several months at the first gas show 2,194 feet and finally blew into an oil well, 2,000 bbls. open. Humble Oil & Refining Co.'s No. 11 Grisham-Hunter, located in SW cor. of W half of NW Section 41, Block B-5, topped the pay at 2,847 feet with an initial production of 124 bbls. per hour, 43 per cent water and b.s., and was drilled to a total depth of 2,884 feet. Independent Oil & Gas Co.'s No. 1 E. M. Cowden, located in SE NW NW of Section 36, Block B-5, was drilled to a total depth of 3,054 feet, after topping the pay at 2,645 feet and being shot with 670 quarts between 2,645-3,041 feet and having an initial production of 395 bbls. Independent Oil & Gas Co.'s No. 4 Grisham-Hunter, located in Section 41, Block B-5, was drilled to a total depth of 2,900 feet after having topped the pay at 2,861 feet and making 2,000 bbls.

Landreth & Roxana's No. 5-A Ida Hendricks, located in NW NE SW Section 29, Block B-5, made 450 bbls. at the pay horizon found at 2,945-47 feet and their No. 6-A Ida Hendricks, located in NE cor. NW SW of Section 29, Block B-5, made 160 bbls. per hour at 2,965-85 feet. Marland Oil Co.'s No. 1 T. G. Hendricks, located in SE cor. of W half of Section 33, Block 26, made 75 bbls. per hour at 2,758-60 feet and their No. 3 T. G. Hendricks, located in NE SE SW of Section 33, Block 26, made 370 bbls. per hour at 2,757-59 feet.

Pure Oil Co.'s No. 7 Grisham-Hunter-B, located in NE SE SE of Section 34, Block B-5, made 4,700 bbls. at 2,754-58 feet. The same company's No. 10 Grisham-Hunter-B, NE NW SE Section 34, Block B-5, made 350 bbls. at 2,754-59 feet. Its No. 12 Grisham-Hunter, located in NW SW SE of Section 34, Block B-5, made 680 bbls. at 2,835-2,935 feet and its No. 1-C Grisham-Hunter, located in Section 45, Block 26, made 1,054 bbls. the first hour pinched at a depth of 2,690-2,701 feet. Roxana Petroleum Corp.'s No. 1-E Grisham-Hunter is making 63 bbls. per hour, 50 per cent water and b.s, from two pay horizons, 2,716-38 and 2,767-95 feet. Roxana Petroleum Corp.'s No. 4-B Hendricks, located in NE cor. SW S half of Section 29, Block B-5, is making 699 bbls. at 3,038-57 feet. The same company's No. 5-B, located in the SE cor. SW of S half SE Section 29, Block B-5, encountered a pay horizon at 2,912-3,000 feet and another at 2,911-80 feet, at which depth it was shot with 180 quarts, making 1,362 bbls. Its No. 8-C Hendricks, located in SW cor. of N half NW Section 29, Block B-5, encountered a pay horizon at 2,909-3,022 feet and plugged back to 2,955 feet and shot 80 quarts at 2,903-35 feet, making 500 bbls., 1 per cent water. Southern Crude Co.'s No. 1 Grisham-Hunter T-89-A made 560 bbls. at 3,033-55 feet. The same company's 3-T-67-A Hendricks made 47 bbls. per hour 5 per cent water and b.s. at 3,112-14 feet. Its No. 1 T-88-K, NE cor. Section 41, Block 26, had an initial production of 4,420 bbls. at 2,825-76 feet.

Estimated Daily Average Production
WEST TEXAS
Week Ending May 12, 1928

County—	No. Wells	Prodn.
Crane County	264	59,123
Crockett County	41	2,585
Ector County	2	12
Fisher County	2	215
Howard County	148	4,273
Jones County	24	1,324
Loving County	2	110
Mitchell County	140	3,036
Pecos County	189	49,804
Reagan County	208	18,487
Runnells County	2	130
Scurry County	5	36
Upton County	288	13,274
Winkler County	161	153,026
Total this week	1,476	305,435
Total last week		406,318
Decrease		100,883

Pecos County

Company, Lease—	Wells	Bbls.
California Oil Co.:		
Yates, Lease 1	15	4,354
Smith, Lease 1	2	160
Smith, Lease 3	12	3,268
Gulf Prod. Co.:		
All leases	11	5,974
Humble O. & R. Co.:		
M. A. Smith	7	1,974
M. A. Smith-B	4	1,575
Kirby Pet. Co.:		
J. H. Tippett	1	77
Kirby Pet. Co. and Edson:		
J. H. Tippett	1	148
Marland Oil Co.:		
Yates-A	10	997
Mazda and Savoy Oil Co.:		
M. A. Smith	1	300
McMan O. & G. Co.-Marland:		
Yates	16	3,812
McMan O. & G. Co.:		
J. H. Tippett	2	396
Smith-A	1	300
Smith-B	1	531
Mid-Kansas and Transcontinental:		
Yates-A	16	3,029
Yates-B	24	6,138
Yates-C	8	2,198
Yates-D	2	850
Yates-E	1	100
Yates-F	1	365
Yates-G	1	50
Smith	2	66
Smith-Taylor	14	3,830
Oil Operators Trust Corp.:		
Pecos River Bed	7	878
Phillips Pet. Co.:		
Smith	1	98
Red Bank Oil Co.:		
Smith	2	515
Roxana Pet. Corp.:		
Tippett	7	3,500
Smith	5	1,197
Skelly Oil Co.:		
Tippett	1	121
Simms Oil Co.:		
Smith	6	3,023
Texon Oil & Land Co.:		
Yates	2	0
Total Yates Field	181	49,824

Winkler County

Company, Lease—	Wells	Bbls.
Atlantic O. P. Co.:		
Grisham-Hunter	8	4,420
Grisham-Hunter-E	2	4,120
Ida Hendricks	1	290
Ida Hendricks-D	5	4,720
Atlantic & Collett:		
Ida Hendricks-F	3	11,050
California Co.:		
Ida Hendricks	8	3,312
Cranfill & Reynolds:		
Grisham-Hunter-B	1	130
Ida Hendricks-A	1	650
Hendricks-C	2	17,000
Gulf Prod. Co.:		
T. G. Hendricks	11	10,406
Humble O. & R. Co.:		
Grisham-Hunter	9	7,478
Ida Hendricks-B	6	2,785
T. G. Hendricks-C	1	5,220
Independent O. & G. Co.:		
E. W. Cowden	1	300
Grisham-Hunter	8	2,940
Grisham-Hunter-B	4	3,795
Hendricks	1	26
Ida Hendricks-B	1	255
Landreth Prod. Corp.:		
Grisham-Hunter	2	2,870
Ida Hendricks-A	6	1,779
Magnolia Pet. Co.:		
Ida Hendricks	6	1,834
Marland Oil Co.		
T. G. Hendricks	2	2,012
Hurchison & Cranfill Bros.:		
Grisham-Hunter	2	85
Grisham-Hunter-C	1	60
Grisham-Hunter-B	2	670
Pure Oil Co.:		
Grisham-Hunter	5	6,170
Grisham-Hunter-B	6	3,325
Republic Prod. Co.:		
Grisham-Hunter-A	2	11,40)
Grisham-Hunter-B	3	2,818
Roxana Pet. Corp.-Llano:		
Scarborough	2	36
Roxana Pet. Corp.:		
Grisham-Hunter-A	2	6,140
Grisham-Hunter-D	4	1,197
Grisham-Hunter-E	1	1,610
Ida Hendricks-B	5	2,703
Ida Hendricks-C	8	6,150
Southern Crude Co.:		
T-67 Hendricks-A	2	265
T-67 Hendricks-C	5	1,080
T-67 Hendricks-B	2	780
T-67 Hendricks-3-B	2	6,785
T-67 Hendricks-F	3	2,270
T-68 Ida Hendricks-A	1	0
T-88 Ida Hendricks-A	2	1,120
T-88 Hendricks-B	2	2,250
T-88 Ida Hendricks-C	6	2,110
T-88 Ida Hendricks-H	2	2,370
T-88 Ida Hendricks-I	1	1,080
Texon Oil & Land Co.:		
Grisham-Hunter-A	2	2,150
Grisham-Hunter-B	2	1,010
Total Winkler County	161	153,026

TEXAS PANHANDLE FIELDS

(Continued from Page 39)

505 feet. Riggs and others' No. 7 McKinley made 50 bbls. at 481-510 feet and their No. 8 McKinley made 295 bbls. at 567-82½. Steed and others' No. 1 Donald was dry and abandoned at 1,006 feet. Whitehill Oil Corp.'s No. 1 Drumm was dry and abandoned at 650 feet. Eureka Oil Co.'s No. 7 State made 10,000,000 feet gas at 3,870-98 feet.

RANGER DISTRICT COMPLETIONS
Week Ending May 12
Brown County

Anna Belle Oil Co.'s No. 2 Hickman made 20 bbls. at 1,268-85 feet. Baily, Mitchell & Lowe's No. 1 Lawson made 40 bbls. of oil and 40 bbls. of water from the sand at 1,288-95 feet at which depth it was plugged and abandoned. Blanchard and others' No. 1 Eubanks encountered sandy lime at 1,290-98 feet carrying some water; sand at 1,607-15 feet made five bailers water per hour and was dry and abandoned at a depth of 1,615 feet. L. G. Bradstreet & Mahlstedt Oil Co.'s No. 1 Eubanks encountered dry sand at 1,210-12 feet and oil sand at 1,212-27 feet at which depth it was shot with 15 quarts making 400 bbls. Charter Oil Co.'s No. 5 Byler made 205 bbls. on swab and 150 bbls. on pump at an oil show encountered at 1,325-40 feet. Fulcher and others' No. 1 Selvidge encountered sandy lime at 1,277-81 feet, dry sand at 1,309-13 feet, 1,322-40 feet and was dry and abandoned at 1,340 feet. J. H. Green and others' No. 1 Bull was dry and abandoned at 1,175 feet. Gilman & McMurray's No. 3-A Hickman was shot with 20 quarts at an oil sand encountered at 1,260-68 feet and made 25 bbls. Henshaw Oil Corp.'s No. 2 Cross made 125 bbls. at an oil show encountered at 1,068-75 feet. Jay Hawk Oil Co 's No. 6 Boysen was drilled to a total depth of 1,235 feet encountering two oil shows, one at 1,220-30 feet and the other at 1,231-34 feet, making an initial production of 90 bbls. Johnson and others' No. 1 Lane encountered an oil show at 1,098-1,115 feet and a hole full of water at 1,126-45 feet, at which depth it was abandoned. Robert Keen's No. 1 Armstrong encountered sand from 1,265-1,440 feet and another sand from 1,434-45 feet at which depth it was shot with 10 quarts making 10 bbls. of oil. Pandem Oil Co.'s No. 5-B Hutton was shot at 1,168-77 feet with 5 quarts and made 100 bbls. H. P. Evans' No. 1 Martin encountered a gas sand at 972-78 feet and made 500,000 feet of gas and hole full of water and was dry and abandoned at 978 feet. Harry Gutzman and G. F. Aldrich's No. 2 Stanley made 10 bbls. at 420-32 feet. King and others' No. 1 Forbes was dry and abandoned at 845 feet. Wilson and others' No. 1 Spain was dry and abandoned at 1,500 feet.

Callahan County

O. P. Deever's No. 1 McDonald was dry and abandoned at 1,252 feet. H. Peeples' No. 1 Ross location abandoned. L. A. Warren's No. 1 Kelton encountered a dry sand at 727-47 feet and was dry and abandoned at 791 feet. Watchorn Oil & Gas Co.'s No. 1 Finley made a hole full of water at 995 feet and was dry and abandoned at 1,015 feet.

Coleman County

Campbell & Empire Gas & Fuel Co.'s No. 1 Sealy-Smith was dry and abandoned at 2,510 feet. Cunningham and others' No. 1-B Jennings had an oil show at 1,172-77 feet and was shot with 10 quarts making an initial production of 110 bbls. on pump. Daniels and others' No. 1 Moody encountered an oil show at 1,840-45 feet making 19 bbls. per hour.

Eastland County

Fulcher and others' No. 1 Woods and others had a hole full of water at 1,614-40 feet and was dry and abandoned at 1,640 feet. Goodwin and others' No. 1 Parker made 18,000,000 feet of gas at 3,013-30 feet and was drilled to a total depth of 3,045 feet. Root and others' No. 1 Stokes was dry and abandoned at 3,700 feet.

Shackelford County

Hope Petroleum Co.'s No. 12 Reynolds made 15 bbls. at 1,285-95 feet. Skelly Oil Co.'s No. 2-N Matthews made 15 bbls. oil and 15 bbls. of water at 1,184-85 feet. The same company's No. 3-N encountered an oil show at 1,040-50 feet, was drilled to a total depth of 1,080 feet and plugged back to 1,050 feet and made 10 bbls. Its No. 4-N made 100 bbls. of oil and 5 bbls. of water at 1,173-80 feet. Tannehill Oil Co.'s No. 1 Matthews made 150 bbls. at 1,135-57 feet. Its No. 3 Matthews was dry and abandoned at 1,215 feet. The same company's No. 4 Matthews had a show of oil at 1,173-77 feet but was dry and abandoned at 1,189 feet.

Stephens County

Pace & Ward and others' No. 3 Stokes was dry and abandoned at 3,389 feet. Texas Fidelity Co.'s No. 3 Cook was dry and abandoned at 3,245 feet. Texas La Power & Light Co.'s No. 3 Morton was dry and abandoned at 1,995 feet.

SHREVEPORT OIL SCOUTS READY FOR AMARILLO

SHREVEPORT, La., May 14.—Seven of the oil scouts active in the Shreveport division and an unlisted number of men who have graduated to higher rank in the industry will attend the annual convention of the National Oil Scouts Association in Amarillo May 21 and 22.

The Arkansas-Louisiana delegation will try again to swing the next annual convention to this part of the country, submitting Hot Springs, Ark., as the most desirable place. The Arkansas-Louisiana division thinks it is entitled to the next convention, especially since it withdrew in favor of West Texas at the 1927 meeting.

Among those attending from Shreveport will be W. N. O'Roark of the Standard Oil Co. of Louisiana, president of the association; Jack Doyle, Humble Oil & Refining Co.; J. S. Fox, Arkansas Natural Gas Corp.; Joe Waters and Jack Hesterly, Louisiana Oil Refining Corp.; Jim Hunter, Dixie Oil Co.; Jess Poulton, Schaeffer Oil & Refining Co.; Art Carmody, North Central Texas Oil Co., of Shreveport; Irvin Deutch, Standard Oil Co. of Louisiana; Oscar Penaud, The Texas Company, and Jimmy Dugan, independent operator of El Dorado. Doyle is on the program for a paper on the recent deep sand developments in the Cotton Valley area, and J. W. Selby of the Louisiana Oil Refining Corp., has prepared a paper on "The Romantic History and Present Activities in the Smackover District of Arkansas."

OPENS PANHANDLE OFFICE

The Phillips Petroleum Co. will establish a separate accounting division for its Panhandle and West Texas properties at Amarillo, Tex., and L. C. Locke, now in the accounting department of the company at Bartlesville, will be transferred to take charge of this new office.

The Phillips Petroleum Co. has made a number of extensions in its field operations and with the completion of several new bulk and service stations throughout the Panhandle, the enlargement of the refinery at Borger and the addition of several new natural gasoline plants, the accounts for this territory will be more conveniently handled through the Amarillo offices.

Brief Items for Petroleum Refiners

D-2 TO HOLD ANNUAL MEET AT ATLANTIC CITY

The annual meeting of Committee D-2 (petroleum products and lubricants) will be held at Atlantic City Wednesday, June 27. The meeting of the committee is being held in connection with the thirty-first annual meeting of the American Society for Testing Materials.

Several matters of special interest to the petroleum industry will be discussed at the meeting. These include new methods of test for crude petroleum; for determination of autogenous ignition temperatures; for gravity of petroleum by means of hydrometer; new definitions relating to petroleum. Submits revisions in three standards and one tentative standard. Recommends for advancement to standard the tentative methods of test for saponification number, for cloud and pour points, for carbon residue (Conradson) and of testing gas oils.

J. Bennett Hill, chief chemist of the Atlantic Refining Co., will present a paper at the meeting entitled, "The How and Why of Gasoline Performance." Robert E. Wilson and D. P. Barnard, IV of the Standard Oil Co. of Indiana, will present a paper on "The Significance of Various Tests Applied to Motor Oils."

WISCONSIN OIL JOBBERS CO-OPERATE IN PURCHASES

CHICAGO, May 12.—A number of prominent oil distributors of Wisconsin have united to form an organization for mutual purchasing and co-operative conduct of their business along restricted lines similar to the Dixie Oil Jobbers in Michigan. The Wisconsin oil men have adopted a similar name and are to be known as the Dixie Oil Jobbers of Wisconsin. Although no list of companies has been given out as yet it is said by a member of the organization that there are at present 22 members. Members of the organization are painting their stations and equipment white, yellow and blue. The Dixie organization is essentially a co-operative buying movement, although in this case, as in Michigan, there is an added element of co-operative selling. There are quite a number of these associations. Some of them are fostered by large refineries who sell the jobbers their products.

BUYS VAHEY COMPANY

The Refiners Oil Co. of Dayton has purchased the properties of the Vahey Oil Co., large distributors at Youngstown, Ohio, according to an announcement by W. E. Talbot, manager of purchasing company. The new owners will continue the business with J. L. Marsh as general manager and E. C. Woods, secretary and treasurer. The Vahey Oil Co. operates 20 stations in Youngstown and surrounding towns. The Refiners Oil Co. during the past year has purchased a number of properties in Ohio.

BUYS SKIMMING PLANT

SWEETWATER, Okla., May 14.—J. A. Johnson of Tulsa has taken over the management of the Sweetwater Refining Co.'s skimming plant at Sweetwater, Tex., and will increase the capacity to 1,500 barrels in the immediate future. The property was formerly owned by C. H. Travis and J. R. Travis of Duncan, Okla., and Sweetwater, and was purchased by several Oklahoma and Kentucky operators, whose names have not been announced. The new company will continue to market their products under the same trade name, including White Lily gasoline and motor oils.

NEW COMPANY TO BUILD PLANT AND PIPE LINE IN WEST TEXAS

The organization of the Burford Oil Co. of Texas by interests closely associated with the ownership and management of the Crystal Oil Refining Corp. of Shreveport, La., for the purpose of operating a refinery and pipe line in West Texas was announced during the past week. F. W. Burford for whom the company was named is president of the new concern and will have charge of its operations. Mr. Burford will continue as vice president and general manager of the Crystal Oil Refining Corp. which operates two refineries at Shreveport.

G. L. Estabrook of Philadelphia, president of the Crystal corporation and member of the firm of E. W. Clark & Co., is chairman of the board of directors of the Burford company. Two hundred thousand shares of stock of no par value

F. W. Burford

Vice president of the Crystal Oil Refining Corp., who has been elected president of the Burford Oil Co. of Texas.

have been issued and fully paid in. The general executive offices of the company will be at Shreveport with Texas headquarters at Pecos City, Reeves County, where the refinery will be located.

The company will build a refinery with a crude oil capacity of 5,000 bbls. daily. In addition a 1,500-bbl. Jenkins cracking unit will be installed to operate with gas oil. This will be the first cracking unit to be installed in a West Texas refinery as the operations of the several plants at present are confined to skimming or topping.

Construction work on the refinery will start about July 1. J. J. Thomas who has been superintendent in charge of refineries for the Crystal company will have a similar position with the Burford company. He will move to Pecos City about July 1.

The Graver Corp. of East Chicago has been awarded the contract for the building of the refinery including the Jenkins cracking unit. The plant will be modern and incorporate all the features of a permanent plant. It is estimated that the cost will be approximately $650,000.

A 6-inch pipe line is now under construction from the Hendricks Pool in Winkler County to Pecos City, which will be a partnership line, jointly owned by Burford Oil Co. and Skelly Oil Co. It is understood that the Skelly company will maintain crude oil terminal facilities at Pecos City, through which they will ship their prospective crude oil production in the Hendricks Pool in Winkler County. In addition to the Burford Oil Co. supplying their proposed refinery in

(Continued on Page 155)

JOBBERS CHANGE NAME OF WISCONSIN ASSOCIATION

CHICAGO, May 10.—The annual meeting of the Wisconsin oil organization was on Wednesday at the Plankington Hotel, Milwaukee. There was a large attendance and an interesting meeting. One of the outstanding actions was a change in the name of the organization from Wisconsin Independent Oil Jobbers Association to the Wisconsin Petroleum Association. The object of this change was to make it plain that membership in the organization was not confined to any one class of distributors but that any bona fide oil dealers were welcome regardless of their affiliations.

At the annual election J. M. McLaughlin of the Bartles-Maguire Co., Milwaukee, was chosen president; Jack Hansen of the Hansen Oil Co. of Burlington, vice president; H. A. Rhode of Rhode, Duester & Hinckley Oil Co., West Allis, secretary, and Ray Andrews of the Pennsylvania Oil Co., Madison, treasurer.

START BUILDING PROGRAM

HOUSTON, Tex., May 12—The Crown Central Petroleum Corp. has started a general building program at its refinery on the Houston ship channel. In addition to many equipment replacements, the improvements will include several new lubricating oil stills with a resultant material increase in the plant's capacity.

CONTRACT FOR CRUDE

HOUSTON, Tex., May 12.—New Orleans Refining Co. of New Orleans has contracted with the Independent Oil & Gas Co. for 1,000,000 bbls. of crude, the crude to be shipped to the company's refinery at Norco, 30 miles east of New Orleans on the Mississippi River. Mexican Petroleum Corp., which operates a refinery at Destrahan, east of New Orleans, has contracted with the Southern Crude Oil Purchasing Co. for 150,000 bbls. of Winkler County crude to be delivered at Galveston at the rate of 10,000 bbls. daily.

SURTEES TRANSFERRED

CHICAGO, May 12.—L. V. Surtees, who has been acting as assistant to Walter Herr in charge of the Chicago office of the Cosden Sales Corp., which handles the sales of the Mid-Continent Petroleum Corp. in this territory, has been transferred to Waterloo, Iowa, where he comes as assistant division manager of that division. He succeeds D. C. Wixon, who has been advanced to manager of the division since the transfer of Robert McDowell to Tulsa.

SUES FOR GAS TAX

CHICAGO, May 12. — The Standard Oil Co. of Indiana begun suit today to secure the repayment to the company of $2,121,059.61 which was paid by the company to the Illinois treasury under the gasoline tax law which was declared unconstitutional. The suit was brought before the United States District Court, northern Illinois.

SEEKING ACCEPTANCE OF SOLVENT SPECIFICATIONS

Producers, distributors and organized consumers of Stoddard Solvent (petroleum distillate for use as a dry-cleaning solvent) are being circularized by the Commercial Standards Group of the Bureau of Standards, for written acceptance to the commercial standard, approved by a general conference recently held at the Department of Commerce, Washington, D. C.

This commercial standard stipulates the minimum requirements for the preparation of this dry-cleaning solvent. At least 65 per cent of the known producers, distributors and organized consumers must accept the standard in writing before it will be published by the Department of Commerce.

In the communication sent the industry, the Commercial Standards Group stated that "while the action of the first general conference is based on a careful study of conditions and requirements, it will be susceptible of such modifications as future trends in the industry may render desirable. In order to make the standard conform with the best current practice in the industry the conference appointed a standing committee, to which the industry is urged to submit any comments or suggestions that are considered beneficial. Such action will help the committee arrive at a decision when considering possible revisions a year from the effective date, which is March 1, 1928."

Members of the standing committee are; Lloyd Jackson, W. J. Stoddard and C. C. Hubbard of the National Association of Dyers and Cleaners; A. L. Clayden of Sun Oil Co.; E. E. Follin of the Standard Oil Co. of Indiana; H. M. Hancock of the Atlantic Refining Co., and Dr. Harvey T. Kennedy of the Bureau of Standards.

PRICE WAR IN GERMANY ENDED BY AGREEMENT

WASHINGTON, D. C., May 14.—An agreement has been recently reported between the German subsidiaries of an American oil company, the Royal Dutch-Shell, and the Russian Naphtha Trust to end the price war in Germany and sell gasoline at the same price. This agreement included also the leading sales organization for benzol, whose price has been fixed on a basis somewhat higher than the price of benzine.

NEW ASPHALT PLANT

CHATHAM, Ontario, May 12.—Establishment of a new plant in Regina, Saskatchewan, for the manufacture of asphalt is planned by Imperial Oil, Ltd. In addittion to the manufacture of asphalt, it is proposed to produce the binder required for the briquettes manufactured at the Bienfait Briquetting plant. A small plant will be erected on the Imperial Oil, Ltd., property this spring, an expert from the company's asphalt plant in Montreal going there this month to superintend the installation.

DISTRIBUTING COMPANY

CHATHAM, Ontario, May 12.—Shareholders of Refineries Distributors, Ltd., held a meeting at Edmonton recently when reports were presented showing a profit of $3,839.74 from the 1927 operations. The bulk stations owned by the company have been leased to the Maple Leaf Oil & Refining Co on a royalty basis. Arrangements are being made for a $15,000 bond issue to wipe out the other liabilities of Refinery Distributors, Ltd.

Proving Ground for the Oil Industry

Large Scale Experimental Laboratory Now Being Constructed at Bureau of Mines Station, Bartlesville, Okla.

By J. L. Dwyer

A large scale experimental laboratory, which is constantly attracting visitors from many parts of the Mid-Continent district, is the new apparatus of the Oil and Gas Section of the United States Bureau of Mines Experimental station at Bartlesville, Okla.

The accompanying pictures show at a glance, the unusual size of the apparatus, and give some indication of the exceptional scope of the scientific studies of oil and gas production which will be conducted by means of this equipment. The work is under the direction of R. R. Brandenthaler, petroleum engineer of the bureau, and he is at present being assisted by W. S. Morris, assistant petroleum engineer. Other members of the section consisting of E. L. Rawlins, associate gas engineer, T. W. Johnson and W. B. Berwald, assistant gas engineers, are assisting in the gas problems of which there are many, particularly those involving measurements.

The 22-ton tank, 60 feet long and 6 feet in diameter, which will be filled with Wilcox sand and charged with oil for experimental work at the Bureau of Mines station.

The work contemplated will be conducted on the largest scale ever undertaken for scientific studies of various problems of oil and gas production, and the equipment is being constructed with a view towards permanent design, and installation. The bureau engineers have taken due consideration of the fact that the equipment may in later years be used successfully for studies of various character, and with this in mind, much of the necessary apparatus and installations have been selected with a view towards flexibility of use in other experiments.

Studies Contemplated

The present studies contemplated include various methods of flowing wells by means of the pressure in the sand, and when natural flow ceases, the gas lift will be installed. Later it is hoped to study pumping methods under as many conditions as will be possible.

The equipment for this work includes, an 81-foot steel derrick, a large tank shown in the picture, and much miscellaneous equipment including air compressors, oil pump, absorber, a large number of gas meters, recording pressure gauges, thermometers, sampling tubes, and other measuring and control devices.

The reservoir tank which is used is one of the most interesting pieces of equipment used in the section. The lower 2 feet in the tank will be filled with clay and the remainder with Wilcox sand, and when charged with oil and gas the tank will represent a miniature oil field. The tank is 64 feet long by 6 feet in diameter. It is designed to withstand 350 pounds working pressure and when empty, weighs approximately 22 tons. The tank is housed in a concrete lined pit with sloping walls. There were several reasons for placing the tank in a concrete lined pit; first, to reduce damage due to possible explosion; second, to obtain a more uniform temperature condition; and third, to afford easy access to all parts of the tank. The first reason means that in event an explosion occurs, the damage sustained will be held in check by the walls of the pit. This is necessary because of the many buildings surrounding the installation. The second reason means that when experimental work starts, the concrete pit may be filled with water and the steel tank completely covered affording a more uniform temperature making it practically a constant bath. Because of the strain placed on the tank by the high pressures involved, the tank will be kept under close observation at all times during the experiments.

Will Be Proving Grounds

When the actual experimental work starts, the equipment will afford an excellent proving ground for many of the flowing devices appearing upon the market, and many theories now advanced regarding the possibilities of natural flow and the air-gas lift methods of producing oil may be tried out on this tank. It will also afford a testing ground for various methods of pumping oil from oil sands.

The importance of accurate measurements is fully realized and the engineers connected with the work are planning to use exceptional precautions in their measurements of oil and gas in this work. Not only will every experiment have a double check as to volumes, pressures and temperatures, but the more important points will be checked three times. The greatest possible degree of accuracy will be strived for in this work.

Before the actual experiments will start, a series of tests will be run on the equipment to insure uninterrupted experiments on account of faulty installations and inaccuracies in measurements. The reservoir tank itself will be subjected to a series of tests to determine its volume both before and after the clay and sand have been placed in it, to locate and eliminate leaks, and to measure the expansion of the tank itself under different pressures.

Taking Samples

During the experiments, samples of the oil and gas will be taken every 10 feet in the flow line from the top of the tank to the top of the derrick. Observation platforms will be located up the derrick and each platform will be equipped with apparatus for obtaining samples from the flow line. In this connection, specially designed equipment will be used. An unusually interesting device to be used in this work is a sampler. It consists of a section of glass encased in a metal container. Slots cut in the metal permit a view of the fluid as it travels up the flow line. A small V-shaped pipe extends to the center of the flow line just above the glass section at an angle of 45 degrees. Thus a segment of the fluid may be obtained while the well is flowing. By reason of the fact that it intercepts fluid from the center of the pipe to the wall of the pipe a representative sample is obtained. The thief is sufficiently small so as not to interfere with the flow to any appreciable degree.

In the large tank used in this experiment, there are innumerable openings which may be utilized for almost every conceivable purpose. These openings were located with a view towards flexibility of use. There are eight 1-inch openings along the bottom of the tank, and their function is to serve as a release for any gas or oil which may by-pass between the clay and inner wall of the tank, or through any possible crevices in the clay itself, thus providing another check as to the disposition of the oil and gas.

Approximately eight hours will be required to fully charge the reservoir with oil and gas. This will be accomplished by injecting the oil through the 60 openings shown at the side of the tank into a like number of screen pipes that will extend horizontally across the tank. The eight manholes shown in the tank will be used for placing the clay and sand in the tank. A row of 1-inch openings which are to be welded along the top, will serve as gas outlets while the tank is being charged. They will also serve as points for taking pressures and temperatures.

The apparatus for conducting production tests at the United States Bureau of Mines Experimental Station, Bartlesville, Okla. This picture shows the tank being lowered into position beneath the derrick.

The entire installation will be housed when completed with corrugated iron. In addition to the derrick and tank house, there will be a compressor house, water cooling system, meter house, storage tanks and gas receivers.

While the work is progressing satisfactorily, several more months will be required until actual experiments are started. The installation calls for so many specially constructed pieces of apparatus that the work can progress only at a certain rate. In this connection, the engineers associated with the work consider themselves very fortunate because of the assistance being rendered by H. A. Buss, instrument maker at the Bartlesville station. Much of the special equipment is constructed in the instrument shop at the station.

MAY CONTINUE TEXAS 3-CENT TAX INDEFINITELY

The Texas State Highway Commission has asked an opinion from the Attorney General regarding the likelihood of a continuation of the 3-cent gasoline tax after August 31. The original tax law provided for a 3-cent tax until September 1 when it was to be reduced to 2 cents, the 1-cent additional tax being considered as necessary at the time to cover emergency expenditures. Hopes of a continuation of the higher tax are based on the fact that the heading of the law did not specify the tax was to be reduced September 1 even though the contents of the law include this. A state law provides that the heading must contain such information.

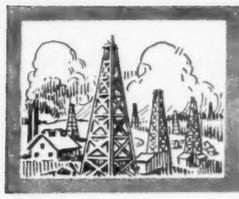
Litigation is certain to follow if the Attorney General holds that the 3-cent tax continues as the Comptroller will not accept a less amount. The law makes the Attorney General the official legal adviser of the Comptroller as well as other state officials, and they follow his advice.

The oil companies know that the purpose of the Legislature was to reduce the tax to 2 cents September 1, and they will plead "legislative intent" in support of the reduction as well as the declaration of the act itself. However, the courts have many times held that Legislatures have failed to do what they set out to do It may have been the accepted pupose to cut the tax, but the Legislature might have failed to do it.

If court proceedings are brought it would be about the first of the year before a decision could be had.

NEW MARLAND TREASURER

Directors of Marland Oil Co. have elected Robert E. Clark treasurer to succeed Seward Sheldon.



REFINERY AND CRUDE PRICES

Quotations on refined products are for interstate or export movement unless otherwise noted.

GASOLINE AND NAPHTHA

	May 15		May 8		May 1	
OKLAHOMA (Group 3)—						
50-52 450 endpoint	.06⅞	.07	.06¾		.06½	
56-58 450 endpoint	.07		.06¾		.06½	
58-60 450 endpoint	.07		.06¾	.06⅞	.06¾	
•58-60 437 endpoint (U. S. Motor)	.07300		.07106		.06940	
60-62 437 endpoint	.07290		.07200		.06944	
•60-62 400 endpoint	.07500		.07271		.07000	
•64-66 375 endpoint	.08000		.07437		.07214	
68-70 360 endpoint	.07⅞		.07½	.07¾	.07½	.07¾
64-66 437 endpoint (blend)	.07¼		.07	.07⅛	.07	
*Weighted average prices May 14 as reported by representative refiners. Sales to jobbers only.						
NORTH TEXAS—						
56-58 450 endpoint	.06⅞		.06¾		.06½	
58-60 450 endpoint	.07		.06¾		.06½	
58-60 437 endpoint (U. S. Motor)	.07⅛	.07¼	.07		.06¾	.06⅞
60-62 400 endpoint	.07¼		.07⅛	.07¼	.06⅞	.07
64-66 390 endpoint	.07⅜	.07½	.07¼	.07⅜	.07¼	
64-66 375 endpoint	.07¾		.07⅝	.07¾	.07½	
68-70 360 endpoint	.07⅞		.07½		.07¼	.07½
64-66 437 endpoint (blend)	.07¼		.07		.06¾	.07
NORTH LOUISIANA—						
58-60 437 endpoint (U. S. Motor)	.07½	.07¾	.07½		.07¼	
ARKANSAS—						
58-60 437 endpoint (U. S. Motor)	.07½		.07¼	.07½	.07	.07¼
PENNSYLVANIA—						
52-54 Naphtha	.08¾	.09	.08¾	.09	.08¾	.09
54-56 Naphtha	.08¾	.09	.08¾	.09	.08¾	.09
58-60 Gasoline	.09½	.09¾	.09¼	.09½	.09¼	.09½
60 Gasoline	.09¾	.10	.09½	.09¾	.09¼	.09¾
62 Gasoline	.10	.10½	.09¾	.10	.09¾	.10
64 Gasoline	.10½	.10¾	.10	.10½	.10	.10½
CALIFORNIA—						
58-60 437 endpoint (U. S. Motor) domestic	.10½	.11	.10½	.11	.10½	.11
CHICAGO DISTRICT (Based on Group 3)—						
50-52 450 endpoint (Naphtha)	.06¾		.06¾		.06½	.06⅝
56-58 450 endpoint	.06¾	.06⅞	.06⅝	.06¾	.06½	.06⅝
58-60 437 endpoint (U. S. Motor)	.07¼	.07⅜	.07	.07⅛	.07	
60-62 400 endpoint	.07½	.07⅝	.07¼	.07⅜	.07⅛	.07¼
64-66 375 endpoint	.07⅜	.07⅞	.07⅜	.07½	.07⅜	.07½
68-70 360 endpoint	.07⅞	.08	.07⅝	.07¾	.07½	.07⅝
64-66 437 endpoint (blend)	.07¼		.07	.07¼	.06⅞	.07

NATURAL GASOLINE

	May 15		May 8		May 1	
OKLAHOMA (Group 3)—						
Grade A, 72-79.9, 375 e.p., rec., 90%	.06⅜	.06½	.05½	.05¾	.06	.06¼
Grade AA, 80-87.9, 375 e.p., rec. 90%	.06⅜	.06½	.05½	.05¾	.06	.06⅛
Grade B, 76-83.9, 375 e.p., rec. 85%	.05¾		.05¼		.05¼	
Grade BB, 84-92, 375 e.p., rec. 85%	.05¾		.05¼		.05¼	
Grade C, 80-92, 375 e.p., rec. 78%	.05¼	.05⅜	.05		.05	.05⅛
NORTH TEXAS—						
Grade A, 72-79.9, 375 e.p., rec. 90%	.06¼	.06½	.05½	.05⅝	.06	.06¼
Grade AA, 80-87.9, 375 e.p., rec. 90%	.06¼	.06⅜	.05½		.06	.06¼
Grade B, 76-83.9, 375 e.p., rec. 85%	.05⅝	.05¾	.05¼	.05⅜	.05¼	
Grade BB, 84-92, 375 e.p., rec. 85%	.05⅝		.05¼		.05¼	
Grade C, 80-92, 375 e.p., rec. 78%	.05¼		.05	.05⅛	.05	
NORTH LOUISIANA—						
Grade AA, 80-87, 375 e.p., rec. 90%	.06	.06⅛	.05¾		.06¼	
Grade BB, 84-92, 375 e.p., rec. 85%	.05⅞	.06	.05½		.05½	
Grade C, 80-92, 375 e.p., rec. 78%	.05½		.05¼		.05⅛	.05¼
CALIFORNIA—						
75-85, 375-390 endpoint	.08½	.09	.08½	.09	.08½	.09
CHICAGO DISTRICT (Based on Group 3)—						
Grade A, 72-79.9, 375 e.p., rec. 90%	.06⅜	.06½	.05½	.05¾	.06	.06¼
Grade AA, 80-87.9, 375 e.p., rec. 90%	.06⅜	.06½	.05½	.05⅝	.06	
Grade B, 76-83.9, 375 e.p., rec. 85%	.05⅝		.05¼		.05¼	
Grade BB, 84-92, 375 e.p., rec. 85%	.05⅝		.05¼		.05¼	
Grade C, 80-90, 375 e.p., rec. 78%	.05¼		.05		.05	

BURNING OIL

	May 15		May 8		May 1	
OKLAHOMA (Group 3)—						
41-43 water white Kerosene	.05¼	.05⅜	.05⅛	.05⅜	.05	.05⅛
42-44 water white Kerosene	.05¾	.05⅞	.05⅝	.05¾	.05¼	.05½
NORTH LOUISIANA—						
41-43 prime white Kerosene	.05¾		.05½		.05½	
NORTH TEXAS—						
41-43 water white Kerosene	.05	.05⅛	.04⅞	.05	.04¾	.05
40-42 water white Kerosene	.04⅞		.04⅝	.04¾	.04½	.04⅝
ARKANSAS—						
41-43 water white Kerosene	.05⅝		.05¼	.05⅜	.05¼	
PENNSYLVANIA—						
43 Kerosene prime white	.06¼	.06½	.06	.06¼	.06	.06¼
45 Kerosene water white	.06½	.06¾	.06½	.06¾	.06½	.06¾
46 Kerosene water white	.07	.07¼	.06¾	.06⅞	.06¾	.06⅞
47 Kerosene water white	.07¼	.07½	.07	.07¼	.07	.07¼
300 Mineral Seal	.07¼	.07½	.07	.07¼	.07	.07¼
CALIFORNIA—						
38-40 water white Kero. (high burning test)	.05½	.06	.05½	.06	.05½	.06
Engine distillate, 43-45 445 endpoint	.08	.08½	.08	.08½	.08	.08½
Engine distillate, 42-44 480 endpoint	.07	.08	.07	.08	.07	.08
CHICAGO DISTRICT (Based on Group 3)—						
41-43 water white Kerosene	.05¼	.05⅜	.05⅛	.05⅜	.05	.05¼
42-44 water white Kerosene	.05¾	.05⅞	.05⅝	.05¾	.05⅜	.05½

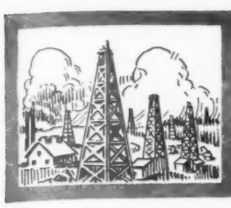
FUEL OILS

	May 15		May 8		May 1	
OKLAHOMA (Group 3)—						
Below 18 Fuel Oil, per bbl.	.70	.75	.70	.75	.72½	.75
18-22 Fuel Oil, per bbl.	.72½		.72½		.75	
22-26 Fuel Oil, per bbl.	.75	.80	.75	.80	.80	.85
24-26 Fuel Oil, per bbl.	.77½	.80	.77½	.80	.82½	
26-30 Fuel Oil, per bbl.	.80	.85	.80	.85	.85	
28-30 Fuel Oil, per bbl.	.85	.90	.85	.90	.90	.95
32-36 Gas Oil (dark)	.02⅝		.02⅝		.02½	.02⅝
32-36 Gas Oil (straw distillate)	.02⅝	.02¾	.02⅝	.02¾	.02⅝	
36-38 Distillate	.03	.03⅛	.03	.03⅛	.03	
38-40 Straw Distillate	.03¼		.03¼		.03	.03¼
NORTH TEXAS—						
24-26 Fuel Oil (sellers' cars) per bbl.	.70		.70		.70	.75
32-36 Gas Oil (straw)	.02½		.02½		.02⅜	
38-40 Straw Distillate	.03	.03¼	.03	.03¼	.03	
NORTH LOUISIANA—						
18-20 Fuel Oil, per bbl.	.85	.90	.85	.90	.85	.90
32-36 Gas Oil	.02⅞	.03	.02⅞	.03	.02⅞	.03
ARKANSAS—						
33-36 Distillate	.03½	.03¾	.03½	.03¾	.03½	.03¾
32-36 Gas Oil (straw)	.02¾	.03	.02¾	.03	.02¾	.03
16-22 Refinery Fuel Oil, per bbl.	.80	.85	.80	.85	.80	.85
GULF COAST (South Texas)—						
Gas Oil	.04¼		.04¼		.04¼	
Bunker C Fuel, per bbl.	1.15		1.15	1.20	1.15	1.20
PENNSYLVANIA—						
30-34 Fuel Oil	.04¾	.05	.04¾	.05	.04¾	.05
36-40 Fuel Oil	.05	.05¼	.05	.05¼	.05	.05¼
CALIFORNIA—						
33-36 Distillate	.03½	.03¾	.03½	.03¾	.03½	.03¾
27-32 Distillate	.02½	.03	.02½	.03	.02½	.03
*15-20 Fuel Oil, Bunker (at tide water)	.85	1.00	.85	1.00	.85	1.00
15-20 Fuel Oil (cargo lots), per bbl.	.75	.85	.75	.85	.75	.85
27 plus Diesel, per bbl.	1.15	1.19	1.15	1.19	1.15	1.19
CHICAGO DISTRICT (Based on Group 3)—						
24-26 Fuel Oil (sellers' cars) Group 3, bbl.	77⅛	.80	.77½	.82½	.85	.90
22-26 Fuel Oil (sellers' cars) Group 3, bbl.	.75	.80	.75	.80	.82½	.85
18-22 (Group 3), per bbl.	.72½	.75	.72½	.75	.77½	.80
16-20 Smackover, per bbl.	.85		.85	.87½	.85	.90
32-36 Gas Oil (zero)	.02¾	.02⅞	.02¾	.02⅞	.02¾	.03
32-36 Gas Oil (industrial)	.02⅝		.02⅝	.02¾	.02½	.02⅝
36-38 Distillate	.03		.03		.03	
38-40 Straw Distillate	.03	.03⅛	.03⅛		.03	.03⅛

*Bunkers.

LUBRICATING OIL AND WAX

	May 15		May 8		May 1	
OKLAHOMA (Group 3)—						
100 vis., 2 color, 20-25 cold test	.06¼	.06½	.06¼	.06½	.06¼	.06½
100 vis., 3 color, 20-25 cold test	.06	.06¼	.06	.06¼	.06	.06¼
150 vis., 3 color, 20-25 cold test	.08¼	.08½	.08¼	.08½	.08¼	.08½
150 vis., 4 color, 20-25 cold test	.08	.08¼	.08	.08¼	.08	.08¼
180 vis., 3 color, 23-28 cold test	.09⅜	.10	.09⅜	.10	.09⅜	.10
180 vis., 4 color, 23-28 cold test	.09¼	.09¾	.09¼	.09¾	.09¼	.09⅜
180 vis., 5 color, 23-28 cold test	.09⅛	.09½	.09⅛	.09½	.09⅛	.09½
200 vis., 3 color, 23-28 cold test	.09½	.10½	.09½	.10½	.09½	.10½
200 vis., 4 color, 23-28 cold test	.09⅜	.10¼	.09⅜	.10¼	.09⅜	.10¼
200 vis., 5 color, 23-28 cold test	.09¼	.10	.09¼	.10	.09¼	.10
240 vis., 5 color, 25-30 cold test	.13¾	.14	.13¾	.14	.13¾	.14
240 vis., 4 color, 25-30 cold test	.13¼	.13½	.13¼	.13½	.13¼	.13½
240 vis., 5 color, 25-30 cold test	.12¼	.12½	.12¼	.12½	.12¼	.12½
280 vis., 3 color, 25-30 cold test	.15½	.16	.15½	.16	.15½	.16
280 vis., 4 color, 25-30 cold test	.15	.15½	.15	.15½	.15	.15½
280 vis., 5 color, 25-30 cold test	.14	.14½	.14	.14½	.14	.14½
Cylinder Stocks:						
600, steam refined, light green	.08	.09	.08	.09	.08	.09
600, steam refined, dark green	.06	.06½	.06	.06½	.06	.06½
190-200 vis. @ 210 Bright Stock	.28	.29	.28	.29	.28	.29
150-160 vis. @ 210 Bright Stock	.22	.24	.22	.24	.22	.24
Waxes:						
124-126 White Crude Scale Wax	.03½	.03⅝	.03½	.03⅝	.03½	.03⅝
PENNSYLVANIA—						
34 Neutral	.07½	.07¾	.07½	.07¾	.07½	.07¾
34 Sundebloom	.07¾	.08	.07¾	.08	.07¾	.08
36 Miners' Neutral	.06½	.06¾	.06½	.06¾	.06½	.06¾
150, 3 color	.27	.27½	.27	.27½	.27	.27½
180, 3 color	.31	.31½	.31	.31½	.31	.31½
200, 3 color	.33	.33½	.33½	.34	.33½	.34
220, 3 color	.34½	.35	.34½	.35	.34½	.35
600, steam refined	.09¼	.09½	.09¼	.09½	.09¼	.09½
635, steam refined	.10¼	.10½	.10¼	.10½	.10¼	.10½
650, steam refined	.11½	.12	.11½	.12	.11	.11½
600, Pennsylvania flash	.14	.15	.14	.15	.14	.15
*550, E filtered	.14½	.15	.14½	.15	.14½	.15
*600, E filtered	.15½	.15¾	.15½	.15¾	.15½	.15¾
600, E filtered	.14¾	.15¼	.14¾	.15¼	.14¾	.15¼
600, D filtered	.22	.23	.22	.23	.22	.23
550, E filtered	.15½	.16	.15½	.16	.15½	.16
550, D filtered	.21½	.22	.21½	.22	.21½	.22
Pennsylvania Bright Stock	.28½	.29	.28½	.29	.28½	.29
†122-124 White Crude Scale Wax	.04	.04⅛	.04	.04⅛	.04	.04⅛
†124-126 White Crude Scale Wax	.04	.04⅛	.04	.04⅛	.04	.04⅛
*At Warren, Pa. †At New York.						
GULF COAST (South Texas)—						
No. 2 color, 100 vis., pale oil	.07½	.08	.07½	.08	.07½	.08
No. 2 color, 200 vis., pale oil	.10	.11	.10	.11	.09½	.10
No. 3 color, 300 vis., pale oil	.11½	.12	.11½	.12	.11½	.12
No. 3½ color, 500 vis., pale oil	.12	.13	.12	.13	.12	.13
No. 4 color, 750 vis., pale oil	.14½	.15½	.14½	.15½	.14	.15
No. 5 to 6 color, 200 vis., red oil	.08	.09	.08	.09	.07½	.08
No. 5 to 6 color, 300 vis., red oil	.09	.10	.09	.10	.08½	.09
No. 5 to 6 color, 500 vis., red oil	.10	.11	.10	.11	.10	.10½
No. 5 to 6 color, 750 vis., red oil	.12½	.13	.12½	.13	.12	.12½
No. 2½ color, 200 vis., pale filtered	.11½	.12	.11½	.12	.11½	.12
No. 2½ color, 300 vis., pale filtered	.13½	.14	.13½	.14	.13	.13½
No. 2½ color, 500 vis., pale filtered	.15	.15½	.15	.15½	.15	.15½
No. 2½-3 color, 750 vis., pale filtered	.17½	.19	.17½	.19	.17½	.19
CALIFORNIA—						
130 vis., 2½-3 color	.09	.10	.09	.10	.09	.10
200 vis., 2½-3 color	.10	.10½	.10	.10½	.10	.10½
300 vis., 3-3½ color	.10½	.11	.10½	.11	.10½	.11
350 vis., 3½-4 color	.11	.12	.11	.12	.11	.12
400 vis., 3½-4 color	.13	.14	.13	.14	.13	.14
Red Neutral:						
200 vis., 4½-5 color	.08½	.09	.08½	.09	.08½	.09
300 vis., 5-6 color	.09	.10	.09	.10	.09	.10



REFINERY AND CRUDE PRICES

Quotations on refined products are for interstate or export movement unless otherwise noted.

400 vis., 5-6 color	.10½	.11	.10½	.11	.10½	.11
500 vis., 4½-5 color	.11½	.12	.11½	.12	.11½	.12
500 vis., 5-6½ color	.11	.11½	.11	.11½	.11	.11½
600 vis., 6 plus color	.12½	.13	.12½	.13	.12½	.13

Note: Bright Stocks are not manufactured commercially on the Pacific Coast.

NEW YORK (BAYONNE) REFINERY PRICES

	May 15	May 8	May 1
†Gasoline, U. S. Motor, 58-60 437	.10¼	.09¾	.09¾
Kerosene, water white, 41-43	.07½	.07½	.07½
*Fuel Oil, bunker "C," 14-16, per bbl.	1.25	1.25	1.35
*Fuel Oil, Diesel, 28-30, per bbl.	2.00	2.00	2.00
Gas Oil, 28 plus	.05¼	.05¼	.05¼
25 pale Paraffin Oil	.12	.12	.12
28 pale Paraffin Oil	.07	.07	.07
285 red Paraffin Oil	.11½	.11½	.11½
250 red Paraffin Oil	.10½	.10½	.10½
225 red Paraffin Oil	.09½	.09½	.09½
200 red Paraffin Oil	.09	.09	.09
Refined Wax:			
120-122 a.m.p., per lb.	.04⅛	.04	.03⅞
125-127 a.m.p., per lb.	.04⅜	.04¼	.04¼
130-132 a.m.p., per lb.	.04⅜	.04¾	.04¾
135-137 a.m.p., per lb.	.06¼	.06¼	.06¼
Petrolatum, in bbls., carload lots, per lb.:			
Dark Green	.02	.02	.02
Amber	.03¼	.03¼	.03¼
Extra amber	.03¾	.03¾	.03¾
Cream	.06⅜	.06⅜	.06⅜
Lily White	.08	.08	.08
Snow White	.08½	.08½	.08½

*Lighterage, 6.5c a barrel extra.

NEW YORK (BAYONNE) EXPORT PRICES

	May 15	May 8	May 1
Gasoline, U. S. Motor, 58-60 437, in cases	.2540	.2540	.2540
Kerosene, standard white, in cases	.1740	.1740	.1740
Kerosene, water white, in cases	.1840	.1840	.1840
600, steam refined cylinder stocks, in bbls.	.17	.16¾	.16¾
635, steam refined	.18¼	.18	.18
650, steam refined	.20	.18½	.18½
600, Pennsylvania flash	.23	.22	.22
630, Pennsylvania flash	.34	.34	.34
600, Warren E	.24	.24	.24
600, Oil City E	.23	.23	.23
Light 135 Bright Stock	.38	.37	.37
Dark 135 Bright Stock	.35½	.34½	.34½

LOS ANGELES EXPORT PRICES

	May 15		May 8		May 1	
Kerosene, water white	.05	.05¼	.05	.05¼	.05	.05¼
U. S. Motor Gasoline, 53-55 437 e.p.	.07¼	.07½	.07¼	.07½	.07¼	.07½

CRUDE OIL PRICES

OKLAHOMA, KANSAS, NORTH AND EAST CENTRAL TEXAS

*Corsicana heavy (March 14, 1927).....$1.00
Other fields .....See gravity table
*Posted by Magnolia Netroleum Co.

TEXAS PANHANDLE
Carson and Hutchinson

Below 31 gravity	$ .60
31-31.9	.65
32-32.9	.70
33-33.9	.73
34-34.9	.76
35-35.9	.79
36-36.9	.82
37-37.9	.85
38-38.9	.88
39-39.9	.91
40-40.9	.94
41-41.9	.97
42-42.9	1.00
43-43.9	1.03
44 and above	1.06

Wheeler County

Below 29 gravity	$ .60
29-29.9	.65
30-30.9	.70
31-31.9	.75
32-32.9	.80
33-33.9	.83
34-34.9	.86
35-35.9	.89
36-36.9	.92
37-37.9	.95
38-38.9	.98
39-39.9	1.01
40-40.9	1.04
41-41.9	1.07
42-42.9	1.10
43-43.9	1.13
44 and above	1.16
Gray County	See gravity table

Humble Oil & Refining Co. Magnolia Petroleum Co. February 21.

*Iatan	Same as North Texas
Crane-Upton-Crockett	See Gravity table
†Glasscock	$ .60
†Chalk	.80

*Includes Howard County and Westbrook Fields. Marland Refining Co. pays $1.05 for Howard County crude, effective May 21.
†Magnolia Petroleum Co., Jan. 14, 1928.

ARKANSAS-NORTH LOUISIANA

Cotton Valley (Below 36 gravity April 11)	$ .75
Belevue (Feb. 24, 1927)	1.20
Urania (Nov. 18, 1927)	.75
East El Dorado (March 16, 1927)	1.00
Other fields	See gravity table

*Cotton Valley crude above 36 gravity takes same gravity price schedule as shown for North Louisiana and Arkansas crude in Mid-Continent gravity price table.
Note—Cotton Valley and Bellevue, Standard Oil Co. of Louisiana, Louisiana Oil Refining Co., Gulf Refining Co. and Magnolia Petroleum Co.; (Magnolia Petroleum Co. posted Cotton Valley February 8); Urania, Louisiana Oil Refining Corp.; East El Dorado, Magnolia Petroleum Co., Gulf Refining Co.

GULF COAST
(Goose Creek, Hull, Liberty, West Columbia, Orange, Boling, Sour Lake, Humble, High Island, Pierce Junction and Spindletop.)

‡Grade A (March 14)	$1.20
Grade B	See gravity table
*Jennings, La. (March 14)	$1.05
†Saratoga, Batson, Daytona (March 14, 1927)	$1.20
§Markham (March 14)	1.00

*Gulf Pipe Line Co. †Sun Pipe Line Co. ‡Humble Oil and Refining Co. and other major buyers. §The Texas Company.

SOUTH CENTRAL AND SOUTHWESTERN TEXAS

*Luling (May 5)	1.00
†Mirando (March 14)	1.00
Rockdale-Minerva (April 15):	
Below 38 gravity	1.25
38-39.9 gravity	1.27
39-39.9 gravity	1.29
40 and above	1.31
*Thrall	...
Callihan (May 15)	1.75
Lytton Springs (Lockhart). See gravity table	
Somerset	See gravity table

*Posted by Magnolia Petroleum. Thrall prices same as North Central Texas less 19½ cents per cwt. freight.
†Magnolia Petroleum Co., Humble Oil & Refining Co., Crown Central Pipe Line Co.

ROCKY MOUNTAIN STATES
Ohio Oil Co.-Midwest Refining Co.
(Effective March 14)

Rock Creek, Wyo. (March 12)	$1.25
Salt Creek	See gravity table
Big Muddy (March 12)	$1.25
Mule Creek (May 1)	1.10
Grass Creek, heavy	.90
Grass Creek, light	1.32

(Continued on Page 150)

CRUDE OIL GRAVITY TABLE

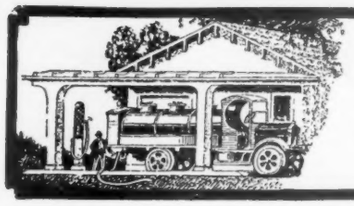
Gravity—	1 Okla., Kans., N. C. Tex.	2 No. La. and Arkansas	3 Smackover, Ark.	4 Stephens Ark.	5 Gray County (Texas Panhandle)	6 Crane Upton, Pecos, Crockett, Winkler Counties (West Texas)	7 Salt Creek Wyo.	8 Grade B. & Light Crude (G. Coast)	9 Somerset (South Central Texas)
24 and above	....	....	.90	....	....	....	....	....	....
Below 24	.76	....	.75	....	....	....	....	....	....
Below 25	....	....	....	....	....	....	....	1.15	....
24 to 24.9	.76	....	....	....	....	....	....	....	....
25 to 25.9	.81	....	....	....	....	....	....	....	....
Below 26	....	....	....	....	.60	.60	....	....	....
26 to 26.9	.86	....	....	....	.60	.60	....	1.19	....
27 to 27.9	.91	....	....	....	.65	.60	....	1.21	....
Below 28	....	.91	....	.85	....	....	....	....	....
28 to 28.9	.96	.96	....	.87	.70	.60	....	1.23	....
29 to 29.9	1.01	1.01	....	.89	.75	.60	1.01	1.25	....
30 to 30.9	1.06	1.06	....	.91	.80	.60	1.06	1.27	....
31 to 31.9	1.11	1.11	....	.93	.85	.60	1.11	1.29	....
32 to 32.9	1.16	1.16	....	.95	.90	.60	1.16	1.31	1.05
33 to 33.9	1.19	1.19	....	....	.93	.60	1.19	1.33	1.07
34 to 34.9	1.22	1.22	....	....	.96	.60	1.22	1.35	1.09
35 to 35.9	1.25	1.25	....	....	.99	.60	1.25	1.37	1.11
36 to 36.9	1.28	1.28	....	....	1.02	.60	1.28	....	1.13
37 to 37.9	1.31	1.31	....	....	1.05	....	1.31	....	1.15
38 to 38.9	1.34	1.34	....	....	1.08	....	....	....	1.17
39 to 39.9	1.37	1.37	....	....	1.11	....	....	....	....
40 to 40.9	1.40	1.40	....	....	1.14	....	....	....	....
41 to 41.9	1.43	1.43	....	....	1.17	....	....	....	....
42 to 42.9	1.46	1.46	....	....	1.20	....	....	....	....
43 to 43.9	1.49	1.49	....	....	1.23	....	....	....	....
44 to 44.9	1.52	1.52	....	....	1.26	....	....	....	....
45 to 45.9	1.55	1.55	....	....	....	....	....	....	....
46 to 46.9	1.58	1.58	....	....	....	....	....	....	....
47 to 47.9	1.61	1.61	....	....	....	....	....	....	....
48 to 48.9	1.64	1.64	....	....	....	....	....	....	....
49 to 49.9	1.67	1.67	....	....	....	....	....	....	....
50 to 50.9	1.70	1.70	....	....	....	....	....	....	....
51 to 51.9	1.73	1.73	....	....	....	....	....	....	....
52 and above	1.76	1.76	....	....	....	....	....	....	....

Column 1—Magnolia Petroleum Co. posted schedule February 21, 1928, making price below 30 gravity $.75 per barrel, 30-30.9 gravity $.90 and 31-31.9 gravity $1.05, with 3 cents increase per degree higher in gravity, taking 32-32.9 gravity at $1.16 as basis, with a top price of $1.76 for 52 and above.
Humble Oil Refining Co. posted $1.52 on all oil 44 gravity and above.
Oklahoma—Prairie Oil & Gas Co., Sinclair Oil & Gas Co., Gypsy Oil Co., Carter Oil Co., The Texas Company, February 21.
North Central Texas—[Including Ranger, Mexia, Powell, Richland, Wortham, Lytton Springs (Southwest Texas), Iatan and Panola (Magnolia only). Iatan posted a flat price of $.93 by Magnolia on January 14, 1928). Currie, Nocona, Moran and Corsicana light]; Texas, Prairie, Sinclair and Gulf; The Texas Company, Humble Oil & Refining Co., February 21.
Kansas—Prairie, Sinclair; Carter, The Texas Company, February 21.
Column 2—Arkansas and North Louisiana—[Caddo, Bull Bayou, Crichton, De Soto, Haynesville, Homer and El Dorado only]; Standard Oil Co. of Louisiana, Texas Pipe Line Co., Louisiana Oil Refining Co., February 21 and Magnolia Petroleum Co., February 23.
Column 3—February 6, Louisiana Oil Refining Co. February 7, Standard Oil Co. of Louisiana, The Texas Company, Gulf Refining Co., Magnolia Petroleum Co. February 8, and on February 10 Atlantic Production Co.
Column 4—Atlantic Oil Producing Co., Louisiana Oil Refining Corp., The Texas Company, February 22.
Column 5—Humble Oil & Refining Co., Magnolia Petroleum Co., February 21.
Column 6—Humble Oil & Refining Co., August 23; Marland Refining Co., Magnolia Petroleum Co., and Gulf Pipe Line Co., August 24.
Column 7—Midwest Refining Co., February 21. All crude over 37 gravity, $1.31 per barrel.
Column 8—Humble Oil & Refining Co. and other major buyers (schedule ends "35 and above"), March 14, with exception of Magnolia Petroleum Co., which stops at 31 degrees gravity. Sun Pipe Line Co. posted 2 cents differential for each degree above 35 gravity and $1.47 for 40 gravity and above.
Column 9—Grayburg Pipe Line Co. and Pioneer Oil & Refining Co., April 7.

CALIFORNIA CRUDE OIL PRICES
Standard Oil Co.-Union Oil Co. (Effective April 1, 1927)*

Gravity—	1 Fullerton, Seal Beach, Long Beach, Huntington Beach, Richfield, Torrance-Dom'guez, Torrance-Inglewood	2 Whittier, La Habra, Montebello	3 Kern River, Newhall-McKittrick, Midway-Sunset, Elk Hills, Lost Hills, Belridge, Buena Vista Hills	4 Coyote	5 Santa Fe Springs	6 Coalinga	7 Wheeler Ridge	8 Santa Maria, Ventura-Orcutt, Salt Lake
14°	.85	.85	.75	.85	....	.75	.75	.85
15°	.85	.85	.75	.85	....	.75	.75	.85
16°	.85	.85	.75	.85	....	.75	.75	.85
17°	.85	.85	.75	.85	....	.75	.75	.85
18°	.85	.85	.75	.85	....	.75	.75	.85
19°	.85	.85	.75	.85	....	.75	.75	.85
20°	.85	.85	.77	.85	....	.76	.76	.85
21°	.86	.85	.79	.86	.85	.77	.77	.85
22°	.87	.85	.81	.87	.85	.78	.78	.85
23°	.88	.85	.83	.88	.85	.79	.79	.85
24°	.89	.85	.85	.89	.85	.80	.80	.85
25°	.90	.86	.87	.90	.86	.81	.81	.86
26°	.92	.87	.89	.91	.87	.83	.82	.87
27°	.94	.88	.91	.92	.88	.85	.83	.88
28°	.96	.89	.93	.93	.89	.87	....	.89
29°	.98	.90	.96	.94	.91	.89	....	.91
30°	1.00	.91	.99	.95	.93	.91	....	.93
31°	1.03	....	1.02	....	.95	.93	....	.95
32°	1.06	....	1.05	....	.97	.95	....	.97
33°	1.09	....	1.08	....	.99	.97	....	.99
34°	1.12	....	1.11	....	1.01	.99	....	1.01
35°	1.15	....	....	....	1.03	1.01	....	1.03
36°	1.18	....	....	....	1.06	....	....	1.06
37°	1.21	....	....	....	1.09	....	....	1.09
38°	1.24	....	....	....	1.12	....	....	1.12
39°	1.27	....	....	....	1.15	....	....	1.15
40°	1.30	....	....	....	....	....	....	....
41°	1.33	....	....	....	....	....	....	....
42°	1.36	....	....	....	....	....	....	....

*Column 1—Long Beach, Seal Beach and Huntington Beach crudes, 14 to 32 degrees, inclusive; Richland and Fullerton, 14 to 30 degrees; Torrance and Inglewood, 14 to 28 degrees; Domingues, 24 to 42 degrees. Rosecrans crude ranges from 14 to 42 degrees, but only Union Oil Co. posts below 24 degrees.
Column 2—Whittier crude, 14 to 22 degrees; Montebello, 14 to 30 degrees.
Column 3—Kern River, Newhall and McKittrick, 14 to 19 degrees; Midway-Sunset, Buena Vista and Elk Hills, 14 to 33 degrees; Lost Hills and Belridge, 14 to 34 degrees.
Column 8—Salt Lake, 14 to 19 degrees, inclusive; Santa Maria, 14 to 30 degrees; Ventura and Orcutt, 14 to 39 degrees. Posted by Union Oil Co.



TANK WAGON MARKETS

Tank wagon quotations for gasoline and kerosene in United States as furnished by the larger marketing concerns May 15.

ALL TANK WAGON AND SERVICE STATION QUOTATIONS INCLUDE TAXES

STANDARD OIL CO. (INDIANA)

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax of	tank wagon
Chicago dist.	14.0	16.0	...	12.0
Decatur, Ill.	14.2	16.2	...	12.1
St. Louis	13.1	15.35	...	11.2
Joliet	14.4	16.4	...	12.3
Peoria	14.2	16.2	...	12.1
Quincy	14.2	16.2	...	11.9
Davenport, Ia.	17.5	19.5	3.0	12.3
Des Moines	16.5	19.5	3.0	12.3
Keokuk	17.5	19.5	3.0	12.3
Sioux City	17.1	19.1	3.0	11.9
Duluth, Minn.	17.5	19.5	2.0	12.9
Minneapolis	16.0	18.0	2.0	12.9
Mankato	14.1	16.1	2.0	12.7
La Crosse, Wis.	17.2	19.2	2.0	13.0
Milwaukee	16.1	18.1	2.0	11.9
Madison	16.3	18.3	2.0	12.1
Detroit, Mich.	17.8	19.8	3.0	13.7
Grand Rapids	17.7	19.7	3.0	13.6
Saginaw	17.9	19.9	3.0	13.8
Evansville, Ind.	17.4	19.4	3.0	13.4
Fort Wayne	17.4	19.4	3.0	13.4
Indianapolis	17.2	19.2	3.0	12.2
South Bend	17.4	19.4	3.0	13.4
Fargo, N. D.	18.9	20.9	2.0	14.9
Huron, S. D.	19.5	21.5	4.0	13.9
Sioux Falls	18.0	20.0	4.0	13.4
K. C., Mo.*	16.9	18.9	3.0	10.6
Springfield*	16.8	18.8	3.0	11.5
St. Louis*	15.6	17.9	2.5	11.3
St. Joseph*	15.5	18.5	3.0	11.2
Wichita, Kans.	14.8	16.8	2.0	10.8
Bartlesville, Ok.	15.5	17.5	3.0	10.5

NAPHTHAS

	Tank wagon	Tank car
Oleum spirits	14.7	9.5
V. M. & P. naphtha	16.2	11.0
Cleaner's naphtha	18.0	12.0
Stanisol	19.0	12.5

Tank wagon prices f.o.b. Chicago; tank car prices f.o.b. Whiting.

STANOLIND FURNACE OIL IN CHICAGO

Less than 100 gallons	9.0
100 to 799 gallons	8.0
800 or more gallons	7.5

Note—Outside Chicago furnace oil discount of 1 cent per gallon is given on deliveries of 100 to 349 gallons and 1½ cents on deliveries of 350 gallons or more.

Tank wagon prices of gasoline subject to discount of 1 cent a gallon on dumps of 50 gallons or more throughout territory except Chicago district. Kerosene subject to 1 cent discount on dumps of 50 gallons or more.

Outside the Chicago district, the following quantity discount schedule is in effect on monthly tank wagon deliveries of gasoline: 6,000 gallons or more, 1½ cents; 10,000 gallons or more, 2 cents; 15,000 gallons or more, 3 cents. These discounts include the 1 cent allowed on dumps of 50 gallons or more at one delivery.

Within the Chicago district, the following quantity discount schedule is in effect on tank wagon deliveries of gasoline, 750 to 2,000 gallons, one-half cent; 2,000 to 3,000 gallons, three-fourths cent; 3,000 to 6,000 gallons, 1 cent; 6,000 to 10,000 gallons, 1½ cents; 10,000 to 15,000 gallons, 2 cents; 15,000 gallons or more, 3 cents.

If the quantity bought during the year is equal to or exceeds 12 times the agreed monthly quantity, the discount is paid or credited on the entire quantity at the close of the term less the monthly payments made during the year.

*State tax 2 cents; remainder city tax.

OHIO

Standard Oil Co. (Ohio)

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax of	tank wagon
All Ohio points.	17.0	19.0	3.0	14.5

SOUTHWESTERN DISTRICT

Magnolia Petroleum Co.*

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax of	tank wagon
Dallas, Tex.	14.0	18.0	3.0	11.0
Fort Worth	15.0	18.0	3.0	11.0
Houston	14.0	18.0	3.0	15.0
San Antonio	15.0	18.0	3.0	10.0
El Paso	17.0	20.0	3.0	16.0
Texarkana	16.5	20.5	3.0	12.0
Muskogee, Ok.	17.0	18.0	3.0	11.0
Okla. City	16.0	18.0	3.0	11.0
Tulsa	15.0	17.0	3.0	11.0
Ft. Smith, Ark.	18.0	20.0	5.0	12.0
Little Rock	20.0	22.0	5.0	12.0

*The following is the schedule of discounts on quantity gasoline sales adopted by the Magnolia Petroleum Co. in Oklahoma: Over 750 gallons a month, one-half cent; over 2,000 gallons, three-quarters cent; over 3,000 gallons, 1 cent; over 4,500 gallons, 1¼ cent; over 6,000 gallons, 1½ cents; over 8,000 gallons, 1¾ cents; over 10,000 gallons, 2 cents. If the quantity bought during the year is 12 times the month's agreed purchases, the discount will be paid or credited on the entire quantity for the year less any monthly purchases.

The schedule on service station deliveries is: Over 200 gallons a month, 1 cent; over 300 gallons a month, 1¼ cents; over 400 gallons, 1½ cents; over 500 gallons a month, 1¾ cents; over 600 gallons, 2 cents. The same rule applies for annual purchases in the tank wagon discounts.

CENTRAL SOUTH DISTRICT

Standard Oil Co. (Louisiana)

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax of	tank wagon
N. Orleans, La.*	16.5	18.5	3.0	14.0
Baton Rouge	15.0	17.0	2.0	12.5
Alexandria	16.0	18.0	2.0	14.0
LaFayette	16.0	18.0	2.0	13.5
Lake Charles	16.5	18.5	2.0	14.0
Shreveport	16.5	18.5	2.0	13.0
Knoxv'le, Tenn.	20.0	22.0	3.0	15.0
Memphis	18.0	20.0	3.0	14.0
Chattanooga	19.5	21.5	3.0	15.0
Nashville	19.0	21.0	3.0	15.0
Bristol	20.0	22.0	3.0	14.0
Lit. Rock, Ark.	20.0	22.0	5.0	12.0

*Tax of 3 cents includes city tax of 1 cent. Louisiana kerosene prices include 1-cent state tax and 1-cent parish tax.

SOUTHERN DISTRICT

Standard Oil Co. (Kentucky)

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax of	tank wagon
Atlanta, Ga.	18.0	20.0	4.0	14.0
Augusta	20.0	23.0	4.0	16.5
Macon	17.0	20.0	4.0	13.5
Savannah	18.0	20.0	4.0	14.5
Birm'ham, Ala.	19.0	22.0	4.0	14.5
Mobile	18.0	21.0	4.0	14.0
Montgomery	17.0	20.0	5.0	15.5
Clarks'le, Miss.	18.0	21.0	4.0	11.5
Jackson	18.0	21.0	4.0	11.5
Natchez	17.5	20.5	4.0	14.0
Gulfport	19.5	22.5	4.0	14.0
Vicksburg	17.5	20.5	4.0	14.0
Jack'ville, Fla.	19.0	22.0	5.0	11.5
Miami	21.0	24.0	5.0	14.5
Pensacola	20.0	23.0	5.0	13.0
Tampa	19.0	22.0	5.0	13.0
Lexington, Ky.	18.0	21.0	5.0	15.5
Covington	19.0	22.0	5.0	15.5
Louisville	18.0	21.0	5.0	15.0

In addition to the state tax of 4 cents on gasoline, Montgomery has city tax of 1 cent on gasoline. Kerosene prices in Georgia include 1-cent tax. In Florida, an inspection fee of 0.125 cent; in Alabama, an inspection fee of one-half cent on kerosene only. Pensacola tax includes 1-cent city levy. Gulfport tax includes privilege tax of 2 cents in addition to state tax.

PENNSYLVANIA-DELAWARE AND PART NEW ENGLAND

Atlantic Refining Co.

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax of	tank wagon
Pittsburgh, Pa.	16.0	*21.0	...	13.0
Philadelphia	16.0	*21.0	...	13.0
Scranton	16.0	*21.0	...	13.0
Allentown	16.0	*21.0	...	13.0
Altoona	16.0	*21.0	...	13.0
Erie	12.0	*18.0	...	13.0
Dover, Del.	19.0	21.0	3.0	13.0
Wilmington	19.0	21.0	3.0	12.0
Springf'd, Mass.	19.0	19.0	...	15.0
Worcester	19.0	19.0	...	15.0
Boston	19.0	19.0	...	15.0
Providence, R.I.	21.0	21.0	2.0	15.0
Hartford, Conn.	21.0	21.0	2.0	14.0
New Haven	21.0	21.0	2.0	15.0

*Includes tax of 3.0 cents. Pennsylvania tax is collected by the dealer and paid by him direct to the State.

ATLANTIC COAST DISTRICT

Standard Oil Co. (New Jersey)

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax of	tank wagon
Atlantic City	18.0	20.0	2.0	14.0
Newark, N. J.	18.0	20.0	2.0	14.0
Annapolis, Md.	20.0	23.0	4.0	14.0
Baltimore	20.0	23.0	4.0	12.0
Cumberland	20.0	23.0	4.0	14.0
Washington	18.0	21.0	2.0	14.0
Danville, Va.	21.0	....	5.0	14.0
Norfolk	21.0	24.0	5.0	14.0
Petersburg	21.0	24.0	5.0	14.0
Roanoke	21.0	24.0	5.0	14.0
Richmond	19.0	22.0	5.0	14.0
Ch'rist'n, W.Va.	20.0	23.0	4.0	14.0
Keyser	20.0	23.0	4.0	14.0
Parkersburg	18.0	21.0	4.0	14.0
Wheeling	20.0	23.0	4.0	14.0
Charlotte, N. C.	20.0	23.0	4.0	14.0
Hickory	20.0	20.0	4.0	14.0
Mt. Airy	20.0	20.0	4.0	14.0
Salisbury	20.0	20.0	4.0	14.0
Charleston, S. C.	20.0	23.0	5.0	14.0
Columbia	20.0	23.0	5.0	14.0

NEBRASKA

Standard Oil Co. (Nebraska)

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax of	tank wagon
Omaha	15.25	17.25	2.0	12.25
McCook	14.75	14.75	2.0	11.50
Norfolk	16.75	18.75	2.0	12.75
N. Platte	17.75	19.75	2.0	13.50
Scottsbluff	17.25	19.25	2.0	13.00

NEW YORK AND PART OF NEW ENGLAND DISTRICT

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax of	tank wagon
Albany, N. Y.	17.0	19.0	...	15.0
New York*	17.0	19.0	...	15.0
Buffalo	15.0	18.0	...	14.0
Rochester	15.0	18.0	...	140.
Syracuse	17.0	19.0	...	15.0
Boston, Mass.	18.0	19.0	...	15.0
Augusta, Me.	21.0	23.0	4.0	15.0
Manch't'r, N. H.	21.0	22.0	4.0	15.0
Burlington, Vt.	20.0	22.0	3.0	15.0

*Prices in steel barrels.

PACIFIC COAST TERRITORY

Standard Oil Co. (California)

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax of	tank wagon
San Francisco	17.0	21.0	3.0	15.5
Pueblo	18.0	18.0	3.0	15.5
Los Angeles	16.5	20.5	3.0	15.5
Reno, Nev.	22.0	26.0	4.0	19.0
Portland, Ore.	17.5	21.5	3.0	16.5
Seattle, Wash.	16.5	20.5	2.0	16.5
Tacoma	16.5	20.5	2.0	16.5
Spokane	20.5	24.5	2.0	20.5
Phoenix, Ariz.	23.0	27.0	4.0	20.5

ROCKY MOUNTAIN DISTRICT

Continental Oil Co.

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax of	tank wagon
Denver, Colo.	17.0	20.0	3.0	14.5
Pueblo	17.0	20.0	3.0	14.5
Grand Junction	20.5	23.5	3.0	18.0
Casper, Wyo.	17.0	19.0	3.0	13.0
Cheyenne	18.0	20.0	3.0	14.5
Butte, Mont.	22.5	22.5	3.0	19.0
Helena	22.5	24.5	3.0	19.0
Salt Lake, Utah	20.0	22.0	3.5	17.0
Albu'que, N. M.	22.0	25.0	5.0	17.0
Boise, Idaho	23.5	25.5	4.0	19.0
Twin Falls	23.5	25.5	4.0	19.0

TANK WAGON CHANGES

May 1—Magnolia Petroleum Co. increased the gasoline station price 1 cent at Oklahoma City, Okla., to 18.0 cents.

May 7—Standard Oil Co. of Louisiana increased the gasoline tank wagon and station prices one-half cent at Chattanooga, Tenn., to 19.5 and 21.5 cents, and 1 cent in Knoxville, Tenn., to 20 and 22 cents.

May 10—Atlantic Refining Co. reduced the gasoline station price 1 cent in Pennsylvania and Delaware, and increased the gasoline tank wagon and station prices 1 cent in Massachusetts, Connecticut and Rhode Island. Continental Oil Co. increased the gasoline station price 1 cent throughout Colorado.

CALIFORNIA GASOLINE MARKET CONTINUES FIRM

LOS ANGELES, Calif., May 11.—The California petroleum market continues to hold up in good shape. This is particularly true of U. S. Motor gasoline which has been the leading feature of the market during the past few weeks. In spite of a falling off in service station sales, due to unfavorable weather conditions, the tank car price of U. S. Motor gasoline continues at about the same levels. This commodity remains very much in demand and prices are firm. The larger companies are quoting 5 cents under the service station price, tax excluded f.o.b. refineries, with the smaller refiners from 1 to 2 cents lower in most cases.

U. S. Motor is practically impossible to get at less than 7½ cents and very few of the companies will even give quotations at this figure. Recent price advances in the East aided this situation materially, and most California companies are at present holding for even higher prices.

The natural gasoline market remains unchanged. While the demand for this commodity is good, production is on the upgrade and prices are a bit soft. No actual weakening has yet been noted, however, most sales being made at around 8½ cents.

The recent action of the major companies in shutting in heavy crude has had its effect in the fuel oil market, prices have had an upward trend during the past few weeks and no new business is now being transacted less than 70 cents a barrel. Government figures for March show a decrease in heavy crude and fuel oil storage and a further decrease is expected during April.

Very little gas oil is available at the present time, prices being unchanged.

MICHAEL HAROLD DIES AT TERRE HAUTE, IND.

Many of the older members of the oil fraternity will regret to hear of the death of Michael Harold, which occurred at Terre Haute, Ind., Thursday, May 10. Mr. Harold was past 80 years of age and had been identified with the industry from his early youth.

He was well known throughout the eastern and Mid-Continent fields. Until recently he lived in Tulsa and at Cross Plains, Tex., but owing to failing health retired to his old home at Terre Haute. His widow, son and daughter survive.

EMPIRE P. L. STATEMENT

The Empire Pipe Line Co. statement for April shows runs of 800,891.04 bbls.; daily average, 26,696.37 bbls. shipments, 882,010.72 bbls.; daily average, 29,400.36 bbls.; stocks April 30, 4,170,638.51 bbls.

CRUDE OIL PRICES

(Continued from Page 149)

Elk Basin (March 12)	1.33
Lance Creek (March 12)	1.33
Poison Spider	1.00
Notches	.65
Rex Lake (February 22)	1.10
Osage	1.33
Lost Soldier (contract)	.95
Hamilton Dome	.85
Greybull-Torchlight	1.33
Cat Creek (Mont.)	1.33
Sunburst (Mont.) (Jan. 25, 1928)	1.50
Artesia (March 12)	1.00
Hogback (N. Mex.) (March 14)	1.33

Note: Salt Creek, Osage, Cat Creek, Greybull and Hogback posted by Midwest Refining Co., and the remainder by the Ohio Oil Co. Both companies post Grass Creek light and Elk Basin.

EASTERN STATES
Joseph Seep Purchasing Agency
(Effective December 17)

Penna Grade Oil in New York Transit Line (New York)	$2.80
Bradford District Oil in National Transit Lines (Pennsylvania)	2.80
Penna Grade Oil in National Transit Lines (Pennsylvania)	2.65
Penna Crude Oil in Southwest Pennsylvania Lines (West Virginia)	2.65
Penna Grade Oil in Eureka Pipe Line Lines (Pennsylvania)	2.60
Penna Grade Oil in Buckeye Pipe Line Lines (Ohio)	2.35
Cabell Grade Oil in Eureka Pipe Line Lines (West Virginia) (February 9, 1928)	1.35
Corning 35-cent grade oil in Buckeye Pipe Line Co.'s line (December 19)	1.45
Corning 25-cent grade oil in Buckeye Pipe Line Co.'s line (December 19)	1.45
Somerset Oil in Cumberland Pipe Line lines (Kentucky) (February 9, 1928)	1.45
Ragland Grade Oil in Cumberland Pipe Line lines (Kentucky) (August 1)	.95
Keister (Pennsylvania) (August 1)	1.10

MIDDLE WESTERN STATES
Ohio Oil Co.
(Effective March 14, 1927)

Lima (February 10)	$1.55
Wooster	1.57
Illinois (February 23,1928)	1.50
Indiana (February 10, 1928)	1.32
Princton (February 23, 1928)	1.50
Plymouth (February 23, 1928)	1.23
Waterloo (November 17, 1926)	1.35
*Western Kentucky	1.32
**Saginaw Mich., Saginaw Sand (February 10)	1.39
**Saginaw Mich., Berea Sand (February 10)	1.79
†Cumberland, Clay, Barren, Clinton and Monroe Counties, Kentucky (March 16)	1.50
‡Oil in lines of Stoll Oil Refining Co. in Oil City, Ky. (March 16, 1927)	1.50
§Oil Springs (Canada) (February 10, 1928)	2.02
§Petrolia (Canada) (February 10, 1928)	1.95

*Posted by Ohio Oil Co.
†Posted by Paragon Development Co.
‡Posted by Stoll Oil Refining Co.
§Posted by Imperial Oil Co., Ltd.
**Posted by Sun Oil Co.

MEXICAN CRUDE

Note—Due to the fact that the exportation of Tuxpam light crude oil has become a negligible factor, prices will no longer be published.

*Panuco heavy (f.o.b. Mexican ports) $1.15

*$.15.

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Natural Gasoline Manufacture

NATURAL GASOLINE CONVENTION TO DISCUSS NEW DEVELOPMENTS

Prepared papers, followed by the general discussions on the latest developments in the manufacture and marketing of natural gasoline, will feature the Seventh Annual Convention of the Natural Gasoline Association to be held at the Hotel Mayo, Tulsa, on May 22 and 23, followed by a plant inspection trip to the Seminole field of Oklahoma on May 24.

The past year has brought important changes in methods of manufacture for the gasoline industry directly affecting the characteristics of the finished products. The latter in turn is being reflected in the marketing policies of many of the larger manufacturers. Practically all these new developments will be discussed in prepared papers at the annual convention. Opportunity will be given for all those in attendance at the business sessions to discuss the subjects as presented.

One of the interesting features of the convention will be a report by Dr. G. G. Brown, professor of chemistry at the University of Michigan and head of the association's research department. Doctor Brown, with the aid of fellowships sponsored by the association at the University of Michigan, during the past year has been continuing the research work which was started two years ago. This work for the most part has been directed toward the accurate determination of natural gasoline value as a motor fuel. During the past year the gas lock and other features of engine performance have been investigated and it is expected that Doctor Brown's report will be of special interest.

On the final day of the convention provision has been made for a trip to the Seminole field of Oklahoma. This field has seen more new plant construction during the past year than any other area in the United States. Those making the trip will be able to see many of the improvements in plant operation, which will be discussed in the business sessions of the two previous days.

Following is the final program for the convention as announced by the association:

SEVENTH ANNUAL CONVENTION OF THE NATURAL GASOLINE ASSOCIATION OF AMERICA
Mayo Hotel, Tulsa, Oklahoma
May 22, 23 and 24, 1928

May 22
Morning Session

8:30 A.M.—Registration.
9:30 A.M.—Welcoming Address: F. L. Chase, Lone Star Gas Company.
President's Annual Address: H. A. Trower, Phillips Petroleum Company.
Appointment of Nominating Committee for Officers and Directors 1928-29.
Paper, "Theory and Practice of Automatic Control," T. G. Laney, Fisher Governor Co.
Discussion: Led by W. A. Melton, Shaffer Oil & Refining Co.
Noon—Dutch lunch furnished by Natural Gasoline Supply Men's Association.

Afternoon Session
E. L. Peck, Empire Gasoline Co., Chairman
Paper, "Theory and Practice of Rectification in Natural Gasoline Plants" ..... L. S. Gregory, consulting engineer, Tulsa
Discussion: Led by G. G. Oberfell, Phillips Petroleum Co.
Paper, "Some Considerations Affecting the Butane Supply"..... S. C. Carney, Roxana Petroleum Corporation
General Discussion from Floor.
Paper: Second Progress Report of the Research Department—Dr. George Granger Brown, department of Chemical Engineering, University of Michigan; Director Research, Natural Gasoline Association of America.

Night Session
George L. Ratcliffe, General Petroleum Corp., Chairman
Continuation of Doctor Brown's Report.
General Discussion from Floor.

Wednesday, May 23
Morning Session—10 O'Clock
Emby Kaye, Skelly Oil Company, Chairman
Paper, "Volatility of Natural Gasoline," G. G. Oberfell, Phillips Petroleum Company.
Discussion: Led by S. C. Carney, Roxana Petroleum Corporation.
Paper, "The Gas Lift and Repressuring and Their Relation to the Natural Gasoline Industry"..... H. B. Bernard, Sinclair Oil & Gas Co.
Discussion: Led by G. M. Davidson, Empire Gasoline Company.
Report of Nominating Committee.
Noon—Dutch lunch furnished by Natural Gasoline Supply Men's Association.

Afternoon Session
Dr. E. R. Lederer, Texas Pacific Coal & Oil Co., Chairman
Paper, "Methods in Marketing," W. T. Anderson, The Oil and Gas Journal.
Discussion: Led by D. E. Buchanan, Chestnut & Smith Corporation.
Paper, "Importance of Gas and Gasoline Analysis to the Natural Gasoline Industry"..... W. W. Robinson, Jr., California Gasoline Company
Discussion: Led by George P. Bunn, Phillips Petroleum Company.

Night Session
Stag Smoker—Food and entertainment furnished by the Natural Gasoline Supply Men's Association.

Thursday, May 24
Plant Inspection Trip to the Seminole District.

CARBON BLACK PLANTS

AUSTIN, Tex., May 14.—The Texas State Railroad Commission has received a request from the Coltexo corporation for permission to build three carbon black plants in the Panhandle, Texas, fields within the next year. One of these plants will be started immediately after permission is given and will be located near LeFors, Tex. The others will be built about six months apart, the next one to be started in about six months.

With the development of this section and the installation of many natural gasoline plants there is likelihood of additional carbon gas plants being built here. According to the petition the new plant will burn approximately 12,000,000 feet of gas daily. Action will be taken by the commission when it meets May 31.

Phillips Wins Suit Involving Use of Stabilizer Process

The suit of the Carbide & Carbon Chemical Corp. against the Phillips Petroleum Co. of Bartlesville, Okla., involving the infringement of the so-called stabilizer patents in natural gasoline manufacture has been dismissed for want of equity in the Federal District Court of Delaware. The decision in the case was announced May 12 by Judge Hugh M. Morris. The plaintiff has announced its decision to appeal the case.

Suit against the Phillips company was filed by the plaintiff on June 12, 1925. Testimony in the case was taken in June of last year. Many of the leading technologists of the country testified in the trial of the case. It was contended by the plaintiff that the defendant company infringed three patents which it owns and which cover the operation of the stabilizer in gasoline manufacture.

The Carbide & Carbon company several years ago developed the stabilizer process and offered it to the natural gasoline industry under a license agreement. Several manufacturers in the Mid-Continent and other parts of the country licensed the process. The stabilizer briefly described is a rectifying column which enables the operator to secure a closer separation of products. In the industry it is credited with the elimination of the "wild" fractions of the finished products without weathering.

It was alleged that the Phillips company, which is the largest manufacturer of natural gasoline, infringed the patents in the operation of several of its plants. The Phillips company's defense for the most part was based on the contention of prior art, the use of the stabilizer principle at its plants not being denied. It was claimed that the plaintiff's patents were not valid due to an earlier application of the basic principles.

The decision in the Phillips case, coupled with a similar decision last summer in a suit against The Texas Company, are considered of great importance in the natural gasoline industry. The Carbide & Chemical corporation filed a suit against The Texas Company involving practically the same issues as in the Phillips case. A decision which failed to sustain the plaintiff's main contentions was rendered last summer in the Federal District Court at Houston. This case is now on appeal.

DOUBLES OUTPUT

The Barnsdall Oil Co. has more than doubled its natural gasoline production during the past year. The major addition was the 28,000-gallon plant in the Earlsboro Field in Oklahoma. The total capacity of the Barnsdall Oil Co.'s plants now amounts to 55,100 gallons daily and in all there are eight plants scattered throughout Oklahoma and one plant in Kansas.

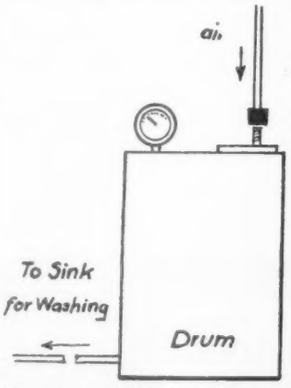
START WARD PLANT

The natural gasoline plant of the Ward Gasoline Co., located 7 miles north of Breckenridge, Tex., started operating Saturday, May 12. The plant which is the oil absorption type has a capacity of 5,000 gallons daily. The plant is the only one operated by the Ward company. John Ward, of Breckenridge, is president of the company and W. F. Seeger, vice president, is in charge of the plant.

A PRACTICAL SUGGESTION

CLEANING LABORATORY APPARATUS

An ingenious contrivance for utilizing the waste gasoline that accumulates in the laboratory from samples, for washing glassware and other articles free of oils or other substances is shown in the accompanying sketch. The recovery of the "waste" gasoline which ordinarily goes back to the refinery "slop" tank is not hindered. The usual procedure in the laboratory when weighing up samples and following the general routine of testing is to pour into the sink the gasoline or other oils in excess of that necessarily used in making distillation and other tests, these waste products going back through the lines from the sink to the "slop" tank where it is again picked up and rerun through the stills.



With the washing apparatus as shown the hookup consists of an iron drum or cylinder able to withstand considerable pressure with three holes; one of approximately 2 inches in diameter with a screw cap fitting over it having an ordinary Schrader automobile valve welded in it. The large hole is for the admission of gasoline and the valve for the admission of air under pressure. A pressure gauge is placed in the hole beside this connection. At the bottom of the tank is the hole for the outlet of the gasoline through half-inch pipe leading to the sink.

The air for the pressure may come from the storage tanks or pumps at the treating department. The air is forced into the tank through a rubber hose connection similar to that used at filling stations. The tank is filled about two-thirds full of the gasoline and pressure of approximately 30 pounds is forced in, valves on the lines to the sink holding back the gasoline until needed. This affords a very convenient method for supplying gasoline for washing and other purposes.

FEDERAL OIL BOARD CHAIRMAN SAYS INDUSTRY MUST CO-OPERATE

By Secretary Work*

Oil conservation is perhaps the phase of conservation that possesses the most news value as well as economic interest just now. The known oil and gas resources of the United States are much more limited in extent than the solid fuels. For years the maintenance of production has been dependent on new discoveries, and the areas in which new discoveries can be made are growing fewer and fewer year by year. The old proverb that haste makes waste is nowhere more evident than in present practices in the production of liquid and gaseous fuels.

The greed for gain or protection therefrom compels each landowner or lessee not only to obtain from the acreage he controls the oil or gas found beneath its surface but to draw so far as practicable from that under his neighbor's land before it can be reduced to possession by another. Not only does this lead to wasteful practices in drilling and production but the balance between available supply and market demand is so evenly drawn that slight overproduction results in economic confusion and waste.

For example, from November, 1926, to March, 1927, increase in production of some 200,000 bbls. of oil per day in Oklahoma resulted in a decrease of more than $400,000 in the value of oil production in that state and in similar loss to producers throughout the country. Nor is the producer's loss reflected in a gain to the consumer. Some slight temporary gain to the consumer there has been, but in the long run his loss will exceed that of the producer. A measure of regulation by the industry itself, or, failing in that, legislation may be expected in the reasonably near future.

Industry Must Co-Operate

Intense competition is today producing a waste problem in the oil industry so big that it is national in extent and interest. Unless the industry is able to co-operate, huge losses are inevitable.

Overproduction is no longer a debatable issue. Whereas a few years ago the optimists in the oil business kept up their courage by denying both the fact of the present surplus and the possibility of future deficit, all now are in agreement that the oversupply of an expendible resource is the sure portent of future famine.

Overproduction today is injuring millions who have their wealth invested in oil properties; it is injuring the great producing and refining companies; it is depleting a natural resource which can never be replaced. With the extraction of each barrel of oil our resources are being lowered that much, and the Government has sought to impress upon producers the necessity for storing oil in the ground instead of bringing it to the surface with resultant loss to everybody concerned.

It is pertinent to emphasize just what this industry means. Measured by the standard of use, its products have now become the lifeblood of transportation—on the surface of the earth, in the air above, in the water beneath. The distance between continents is now figured in "gallons of gasoline." In 1861, two years after Drake's well started this industry, the country's production for 12 months was much less than the wells of this country have produced in the last 24 hours. The first well struck oil at 68 feet; today they are drilled to a depth of a mile and a half. Last year the oil output from existing and new gushers exceeded 900,000,000 bbls. Nearly 10,000,000,000 bbls. of petroleum have been taken from the earth, but no one can assure us that additional billions are yet to be recovered.

The present crisis in oil—described by one oil company president as the most malignant form of industrial disease and by another as an economic disaster of international proportions—has come because reasonable and appropriate conservation measures have been delayed, law-makers and law-interpreters standing back while the procession of oil operators, geologists, production engineers, inventors and builders of machinery passed by.

It was in appreciation of this situation that our Federal Oil Conservation Board urged the formulation and adoption of remedial measures. More than a year has now passed and yet no constructive move has been made toward relieving the pressure of competition which now bears so heavily upon the thousands of units in the business which the country cannot afford to see go down and out.

The once great divergence of opinion concerning the necessity for national conservation no longer exists among the leaders of the industry; therefore it behooves the legal profession identified with the oil world to work out a sane and positive course that will protect our national structure in years to come.

It was with that end in view that, as Secretary of the Interior and chairman of the Federal Oil Conservation Board, I suggested last August, before the annual meeting of the Mineral Law Section of the American Bar Association, the selection of the Committee of Nine, to draft a bill for the Federal Oil Conservation Board to study and recheck, with a view to its introduction in the Seventieth Congress. That representative committee has now reported and I believe the time has arrived when the Federal and state governments should legislate to protect our oil deposits against waste in production, and the public against future high costs of oil products.

Gasoline Prices

One wonders if the single item of gasoline prices may obscure our long distance vision of the larger problem. The owners of more than 22,000,000 automobiles in the United States are interested in the price of gasoline. The rise and fall of price levels are watched constantly and carefully. The causes for frequently recurring fluctuations are debated with varying emotions. Analysis of contributing factors often is sound, but more often unsound. The present trouble is not one of price demanding regulation in terms of the consumer, but rather conservation measures to prevent overproduction and permit the stabilization of the industry.

Consumers are inclined, of course, to remember the days of low prices and forget that gasoline prices have repeatedly risen to higher levels than prevail at the present time. The automobilist, when he speaks of low prices, usually has in mind the low prices of 1914 and 1915, when the flush production of the Cushing field forced the price of crude oil to the low level of 30 cents a barrel, but the same buyer fails to recall the high price of 1920, when there was a threatened shortage of crude and gasoline prices reached the highest point for many years—31 cents a gallon in New York City.

During the past three years—that is, during the life of the Federal Oil Conservation Board—two great pools, Smackover and Seminole, have been developed, with enormous production—production not needed and production attended by great economic and physical waste.

Plainly, distribution costs too much, for there are far too many outlets for the oversupply of this commodity, the total demand for which is much more affected by the weather than by the brightly-painted service stations or attractive roadside advertising signs. We thus pay for a competition that increases costs rather than reduces prices, and that piling up of unnecessary cost has been estimated in a single state at not less than $20,000,000.

The layman usually fails to consider the fluctuations in the prices of crude oil. These are greater than those in the prices of gasoline. The outstanding fact in the present oil situation is that during the past few years new and large producing oil fields, developed to capacity under conditions of rapid and competitive exploitattion, have produced a supply of oil far above and beyond the demand of essential use. The supply of crude more directly affects its price, so that the bringing in of a few big pools within a short period completely upsets the price structure.

Violent Competition

The market has been deluged with so great a supply that petroleum has been forced into keen and violent competition with coal in nearly all its area of consumption, with the result that possibly one-half of America's oil production is being used to displace the legitimate and effective use of coal.

In the light of these developments it can hardly be urged that the time is not ripe for a rigid economy and conservation of petroleum. Of course, all that I have said of the relation of oil conservation to public interest, of the inherent danger to future prosperity from present waste, is typical of a larger problem in democratic government.

Incidentally, the Government itself as the administrator of the public and Indian lands happens to be no negligible factor in the current production of petroleum. As regards the hundreds of oil and gas leases on government land, I may say that the federal landlord is perhaps the best conservattionist among landlords.

If federal or additional state legislation is essential as a corrective, the sooner such enactment the better. I might suggest, however, that we have too many laws for superficial symptoms.

If the remedy rests with the oil companies themselves, through voluntary and whole-hearted co-operation, or through compulsory unit pool operation, or some other method, the time is pre-eminently ripe for action. Our national progress depends largely upon a known and plentiful supply of petroleum.

*The Nation's Business, May.

REFINERS IMPROVE MARKET SITUATION

(Continued from Page 29)

The average gasoline recovery, which includes the natural gasoline blended at refineries, the first three months of this year was 40.7 per cent, an increase of 0.5 per cent over the same period last year. This percentage increase while small before the end of the year may prove to be an important factor in the total quantity of crude oil required by refiners to take care of the gasoline requirements.

Gasoline yields from crude oil are dependent on the prevailing market for fuel oil as well as crude oil prices and the gravity of crude oil supply. The slump in fuel oil prices of approximately 50 cents per barrel in the coastal areas during the past few months coupled with the recent advances in refinery gasoline prices has made cracking operations more attractive than they were over the greater part of last year. The same situation also applies at many interior refineries. This means that more gasoline will be obtained from the crude oil regardless of the gravity of the product.

Gasoline

The reduced runs of refineries previously mentioned when considered with the increase in demand explain the data on gasoline. The curtailed operations have held down the supply while the demand has shown the normal increase so far this year over the same period last year. The domestic demand based on refinery shipments has shown a very satisfactory increase. Exports were disappointing the first two months of this year but in March showed a large increase over the same month last year.

Despite a total increase in demand of 10 per cent it will be noted that gasoline stocks on April 1 were approximately 12,000,000 bbls. less than on the same date last year. Ordinarily refiners pile up stocks of gasoline so that each winter and spring month shows a large increase over the same month last year. In contrast this year on April 1 the gasoline stocks were less than on the same date in 1925. Based on former methods of operations refiners on April 1 of this year would have had 60,000,000 bbls. of gasoline on hand. It is interesting to note in this connection that to have produced this extra 20,000,000 bbls. of gasoline would have required 50,000,000 bbls. of crude oil which is now in the tanks of producers.

Other Products

The accompanying tables summarize the statistical position of refinery products not shown in the chart. Kerosene shares the desirable position of gasoline in regard to supply and demand. This explains why kerosene prices at Mid-Continent refineries have been within 2 to 3 cents of the gasoline price for the U. S. Motor grade.

Lubricating oil stocks have increased this year but not enough at this time to be alarming to the manufacturers. One of the outstanding developments of the year so far has been the continued improvement in the petroleum wax situation. With a heavy export and domestic demand stocks have been reduced 65,000,000 pounds. The manufacturers of wax suffered from overproduction in 1926 and over the greater part of 1927. This situation has been remedied both in the production and consumption ends bringing a market which is constantly gaining strength.

Data on fuel oils and gas oils are not included because complete figures on supply and demand are not available from the government reports.

Kerosene, Lubricating Oils and Wax
(Figures given in barrels unless otherwise noted)

Kerosene Supply (Daily)

	First Three Mos. 1928	First Three Mos. 1927	Year 1927
Domestic	160,200	159,640	154,000
Imports	700	10	140
Total	160,900	159,750	154,140

Kerosene Demand (Daily)

Domestic	95,500	109,200	103,000
Exports	63,200	48,510	53,000
Total	158,700	158,720	156,000

Kerosene Stocks

April 1, 1928	April 1, 1927	January 1 1928
7,826,000	8,753,000	7,669,000

Lubricating Oil Supply

	First Three Mos. 1928	First Three Mos. 1927	Year 1927
Domestic	91,100	85,200	87,000
Imports	.....	400	400
Total	91,100	85,600	87,400

Lubricating Oil Demand

Domestic	56,300	56,230	59,000
Exports	28,700	26,430	27,000
Total	85,000	82,660	86,000

Lubricating Oil Stocks

April 1, 1928	April 1, 1927	Januury 1, 1928
8,412,000	8,035,000	7,860,000

Petroleum Wax Production
(Data given in pounds)

	First Three Mos. 1928	First Three Mos. 1927	Year 1927
Domestic	1,690,000	1,723,500	1,601,000
Imports	46,000	37,900	56,000
Total	1,736,000	1,761,400	1,657,000

Petroleum Wax Consumption

Domestic	787,500	680,900	777,000
Exports	1,295,000	900,600	930,000
Total	2,082,500	1,581,500	1,707,000

Petroleum Wax Stocks

January 1, 1928	April 1, 1927	January 1, 1928
136,465,000	201,340,000	167,214,000

MID-CONTINENT SCOUTS ELECTION OF DIRECTORS

At a meeting of the Mid-Continent Oil Scouts and Land Men's Association, the following directors were elected to serve during the current year: Fred J. Hill, of the Mid-Continent Petroleum Corp. of Seminole; C. R. Welch, Comar Oil Co., Ponca City; R. P. Brewer, Jr., Barnsdall Oil Co., Wichita, Kans.; Simon Crites, Phillips Petroleum Co., Bristow; Rex L. Dawson, Carter Oil Co., Tulsa; Henry Langspecht, Roxana Petroleum Corp., Tulsa; C. E. Hewitt, Mid-Continent Petroleum Corp., Okmulgee; G. W. Greenlee, Mid-Continent Petroleum Corp., Cushing; B. B. Braly, Jr., Barnsdall Oil Co., Seminole; D. D. Thompson, Atlantic Oil Producing Co., Shawnee; James R. Craun, Carter Oil Co., Pawhuska; E. J. Gordon, Pure Oil Co., Wichita, Kans.; and John Young, of the Gypsy Oil Co., Ponca City.

The constitution of the association was amended to permit all chief scouts and heads of land departments to carry active memberships in the association instead of the honorary memberships which they have previously held.

Oil Securities in Stronger Position

Exceptional Activity Among Pipe Line Issues. Improved Feeling Regarding Outlook for the Petroleum Industry

Although there were no spectacular performances among the oil issues last week, they managed to withstand the pressure which was felt among many of the industrial groups by the application of 6 per cent money. This in the minds of the market students clearly indicated the greatly strengthened position of the oils as a group.

Exceptional activity among the oils was seen in the pipe line offerings, with Illinois Pipe running up to a new high at 245½. Gulf Oil Co. of Pennsylvania, which has a rather elaborate pipe line system of its own, also was in strong demand, touching new ground at 140½.

An improved feeling among the members of the industry who have clung to the belief that a crude advance is imminent, and more progress in evidence as the output of West Texas declined sharply when the curtailment program went into effect combined to keep the oils strongly entrenched.

The Texas Corporation was among the leaders in the oils with new figures when it sold above 65 on Monday of this week. Panhandle Producing & Refining Co. was also in good position, advancing to 21¾.

According to reports from the East, the oils are expected to enlarge materially upon their current advances, and should be among the leaders in the general market during the next few weeks.

Shell Union

The 1927 report of Shell-Union Oil Corp., 72 per cent stock owned by Royal Dutch-Shell group, shows net of $11,344,914, the smallest reported since 1922, and after preferred dividends equaled $1.09 a share on 10,000,000 shares; about 60 per cent smaller than the $30,483,793 net, $3.04 a share, in the record year 1926. No special reserve was deducted in 1927. This item took $5,000,000 of income in the previous year. A new item was interest and amortization on funded debt of $1,962,740, as Shell-Union issued its first bonds last year.

J. C. Van Eck, president, outlines the rapid growth of the refining and marketing branches of the company. Compared to the year previous there was a 10 per cent increase in the volume of products sold. The refinery production was greatly increased for the year by the operation of the new plants at Chicago, Ill., and in California. All plants had a crude and pressure still capacity of 220,000 barrels daily at the end of 1927, an increase of 40,000 daily. They handled 53,536,326 barrels of crude last year, contrasted with 45,163,067 in 1926. The casinghead yield was 138,574,062 gallons, compared with 86,764,589 in 1926.

Trunk pipe lines were increased to 2,064 miles, with a large new system not yet completed from West Texas to the Oklahoma lines running to St. Louis and Chicago. The capacity of the lines north from Oklahoma is to be increased to handle a new crude supply from West Texas through a new line to be finished this summer.

Sales of products totaled $140,325,822. Notwithstanding the severe competition in gasoline market, company marketed entire output of refineries during past year.

East of the Rockies Shell entered into the marketing territory in Mohawk valley of New York. Much of the new marketing centered in Ohio and other states bordering the Great Lakes, with Shell establishing modern bulk plants from which to supply the increasing string of retail stations.

To accomplish the year's expansion, to use $19,000,000 to retire preferred, and to prepare treasury for 1928 budget outlays, Shell sold $80,000,000 securities. They took the form of $50,000,000 20-year 5 per cent debentures of parent company and $30,000,000 25-year 5 per cent debentures of Shell Pipe Line Corp. The balance sheet reflects these new funds with property of $354,990,237, being $48,640,000 above 1926; cash items gaining $26,700,000 to $49,648,809; $16,965,400 preferred retired and some miscellaneous changes.

Atlantic-Superior

The Atlantic Refining Co. has entered into an agreement to sell its stock holdings in the Superior Oil Corp. The stock will be taken up within the next two months under the terms of contract. The announcement did not name the purchasers nor the price.

The Atlantic Oil Producing Co., a wholly-owned subsidiary of the Atlantic Refining Co., holds the Superior Oil stock, owning 296,900 shares out of 1,105,208 shares of Superior Oil outstanding. Consummation of the sale, it is reported, will not affect Atlantic Refining Co.'s contract for the purchase of crude oil from Superior Oil. This contract, entered into January 24, 1920, runs until January 24, 1930.

Atlantic Refining Co., in a statement on the reported sale, says: "Officials of Atlantic Refining Co. on being approached regarding the sale of holdings in Superior Oil Corp. stock acknowledged that there exists the contract to sell their entire holdings. They stated that the sale was consummated through Hansell & Co. of New York, declining, however, to state the terms of the contract. The Atlantic Refining Co. has owned stock in the Superior Oil Corp. since 1920."

It is reported in financial circles that New York banking interests previously identified with other oil interests are believed to be the purchasers of Atlantic's holdings in Superior Oil. While the interests concerned have not yet confirmed the purchase, it is believed some statement will be made within a few days.

Columbian Carbon

Net income of Columbian Carbon Co. and subsidiaries for quarter ended March 31, 1928, was $670,835 after depreciation, depletion, taxes, etc., comparing with $538,118 in first quarter of 1927.

Columbian Carbon Co. and subsidiaries reports for quarter ended March 31, 1928, net income of $670,835 after depreciation, depletion and federal taxes, equivalent to $1.66 a share earned on 402,131 shares of no par stock. This compares with $538,188, or $1.33 a share, in first quarter of 1927.

Consolidated income account for quarter ended March 31, 1928, compares as follows:

	1928	1927
Net after Fed. taxes	$1,031,338	$911,876
Depr. and depletion	360,503	373,758
Net income	$670,835	$538,118
Dividends	402,131	402,131
Min. divs. of subs.		18,375
Surplus	$268,704	$117,612

Tide Water Associated

Tide Water Associated Oil Co. and subsidiaries report for quarter ended March 31, 1928, net income of $2,045,588 after interest, depreciation, depletion, federal taxes and other charges, equivalent after 6 per cent preferred dividend requirements to 20 cents a share earned on 4,796,145 no par shales of common stock. This compares with $1,415,359, or 7 cents a share on common in first quarter of 1927.

Tide Water Oil Co. and subsidiaries report for quarter ended March 31, 1928, net income of $709,482 after depreciation, depletion, federal taxes, minority interests, etc., equivalent after preferred dividend requirements to 20 cents a share earned on 2,168,454 no par shares of common stock. This compares with $1,618,211, or 61 cents a share, earned on 2,158,511 shares in first quarter of 1927.

Consolidated income account of Tide Water Associated Oil Co. and subsidiaries for quarter ended March 31, 1928, compares as follows:

	1928	1927
Gross sales	$33,886,312	$43,713,348
Expenses, abandoned leases, etc.	27,661,398	37,374,950
Operating income	$6,224,914	$6,338,398
Other income	299,725	318,436
Total income	$6,524,639	$6,656,823
Interest	357,366	340,660
Depreciation and depletion	3,246,171	3,149,741
Federal taxes	298,800	113,160
Balance	$2,622,302	$3,053,262
*Min. interest	576,714	1,637,903
Net income	$2,045,588	$1,415,359
Preferred dividends	1,091,265	1,091,176
Common dividends		2,873,366
Surplus	$954,323	†$2,549,183

*Includes preferred dividends of subsidiaries. †Deficit.

Consolidated income account of Tide Water Oil Co. and subsidiaries for quarter ended March 31, 1928, compares as follows:

	1928	1927
Gross sales	$18,520,881	$22,340,283
Expenses, abandoned leases, etc.	15,806,830	18,063,354
Operating income	$2,714,051	$4,276,929
Other income	185,619	282,622
Total income	$2,899,670	$4,559,551
Depreciation and depletion	1,972,250	1,794,614
Federal taxes	92,742	82,865
Balance	$834,678	$2,682,072
Outside stockholders' property	125,196	1,063,861
Net income	$709,482	$1,618,211
Preferred dividends	258,815	258,815
Common dividends	433,692	809,411
Surplus	$16,975	$549,985

Mexican Eagle Oil

Mexican Eagle Oil Co. declared a dividend of 5s 6.83d on each 10 shares of first preference stock and the new Canadian Eagle Co. declared a dividend of 1s 5.17d on each 10 shares of its first preference stock. Mexican Eagle first preference par value will now be reduced to 4 pesos from 10 pesos (Mexican) and new Canadian Eagle first preference shares will be issued to Mexican Eagle shareholders in par amount equal to reduction in Mexican Eagle shares.

This is the first declaration made on new stock since the change in capital structure at end of April and formation of new Canadian Eagle Oil Co. This capital readjustment consisted in a division of assets, and present dividend dis-

LIST OF ACTIVE PETROLEUM STOCKS

Stocks—	Par	Clos. Quot. May 14	Clos. Quot. May 7	1928 High	1928 Low	1927 High	1927 Low	1926 High	1926 Low
Amerada Corp.	..	36	35¾	38	27⅛	37⅛	27⅝	32⅞	24⅜
Atlantic Refining, com.	100	131	135	139½	95¾	131⅝	107	128⅜	97
Barnsdall A	25	25	25	26⅞	21⅛	35½	20¾	32½	23½
California Petroleum, com.	25	32½	31¾	31	24	32⅝	20	38⅛	30⅝
Houston Oil	100	148½	146½	166¾	127	175¾	60⅛	75	50¼
Independent Oil & Gas	..	29	28⅞	31⅞	21⅜	32⅜	17⅝	34	20¼
Louisiana Oil	10	17⅛	17⅛	19¾	9¾	18⅛	10½	19⅝	12
Maracaibo	..	21⅛	19½	18⅛	12½	22⅜	12	27⅜	18⅜
Marland	..	40⅝	41¼	44	32	58⅛	31	63⅜	41¼
Mid-Continent Petroleum	..	32¼	31¼	33¼	23⅛	39⅜	25½	41	25⅜
National Supply	50	101	104	110	90	95¾	76	84⅞	55½
Oil Well Supply	25	30⅜	42	41	30	44⅜	31½	36	30
Pan American B	50	50⅜	52	54⅝	37⅜	66⅜	45¼	72⅜	56⅛
Pan American, Western B	..	25¼	25	28⅜	18¼	37⅞	16⅜	46	34
Phillips Petroleum	..	42⅜	42¼	44⅝	35¼	60¼	36½	54⅞	42⅛
Producers & Refiners	50	23⅞	23⅜	26⅞	16	33⅞	16⅜	26	11
Pure Oil, com.	..	24⅞	25	27½	19	33½	25	31	25⅜
Royal Dutch, N. Y., sh.	13.40	54⅜	54⅝	53⅜	44⅝	54½	44¼	57⅜	49⅜
Shell Transport	10	47	46⅜	44	39⅜	49	41½	48⅞	42
Shell Union, com.	..	29½	29⅞	31	23⅛	31⅜	24⅝	30⅞	24
Simms Petroleum	10	23¼	23⅝	25½	18⅛	23⅞	14½	25⅝	16½
Sinclair Consolidated	..	29⅛	28⅝	30⅜	17½	22⅝	15⅛	24⅞	16⅜
Skelly Oil	25	32½	31½	34	25	37⅝	24⅛	37⅛	27
Standard of California	25	62⅛	62	63⅞	52	60⅜	50⅜	63½	54
Standard of New Jersey, com.	25	46¼	45⅝	49	37⅜	41⅜	35⅛	46⅝	37½
Standard of New York	25	39	37⅜	41½	28⅜	34⅛	29⅜	47⅛	30⅝
Sun Oil Co.	..	48	47⅜	44⅜	31½	34⅞	30	41¼	30⅛
The Texas Company	25	65	62½	65¼	50	58	45	58	48
Texas Pacific Coal & Oil	10	16⅛	15½	17⅝	12⅛	18⅞	12	19½	12⅛
Tide Water Associated	..	19	19⅝	20⅜	14⅜	19⅛	15⅜	21	17
Transcontinental	..	8⅞	8⅜	10⅛	7⅛	10⅜	3⅜	5½	3
Union Oil of California	25	53⅝	53	57	42⅜	56½	39⅜	53⅜	37⅛
Union Tank, com.	100	125½	125	125	119¼	126	94	120⅜	84¼
White Eagle Oil & Refining Co.	..	25¼	24½	25⅜	20⅛	27½	21⅜	29⅜	25⅛
Standard Oils									
Anglo-American	£1	20	20¼	22⅜	18½	21⅜	17⅛	19⅜	16½
Borne Scrymser	25	55	55	56	50	69	49½	75	65
Buckeye Pipe Line	50	70	73½	70	58	59	45	69½	42
Chesebrough Manufacturing Co.	25	156	156½	149⅜	117¼	126	76½	81⅛	63
Continental	10	19	19⅛	23	16	22⅜	16¼	25⅞	10⅛
Cumberland Pipe Line	100	105	104½	105	89	‡137	90	137	102
Eureka Pipe Line	100	85	85	72⅜	64⅛	66	47	43⅜	43
Galena Signal, com.	100	10	10	7⅜	4	13½	4½	32⅛	9⅞
Humble Oil & Refining Co.	25	81½	79½	84⅞	59½	67⅜	54	99⅝	52
Illinois Pipe Line	100	239⅜	211⅜	245	176½	181½	123⅜	144	131
Imperial Oil	..	70⅜	70	65¼	56⅞	64⅜	37⅜	39⅜	32¼
Indiana Pipe Line	50	87	88	89½	75	93	61	68	52¼
International Petroleum Co.	16	44¼	42½	45⅛	35	36⅜	28¼	35¼	28⅜
National Transit Co.	12.50	30⅜	29⅜	30⅛	20½	23¼	13¼	30⅜	27¼
New York Transit	100	59	59	54	38½	42	31¼	61½	27¼
Northern Pipe Line	100	120	121½	120⅜	94	96	70	80½	64
Ohio Oil Co.	25	67⅜	65⅛	66½	58½	66	52	67¾	55⅜
Penn-Mex Fuel	25	58	55	81	33	36⅛	12	24⅛	15
Prairie Oil & Gas	25	53½	53½	56	47⅝	55½	45⅜	60¼	49
Prairie Pipe Line	100	214¾	215	224	184	189¼	132	137½	122½
Solar Refining Co.	100	180	185	178	175	‡201½	178	212	184½
South Penn Oil	25	49⅜	48¼	52	36⅜	41½	34½	50	30
Southwest Pa. Line	100	100	100	88⅜	70	78	55½	56	47½
Southern Pipe Line	50	35	33	33½	21	39	18½	27	34
Standard of Indiana	25	81	80½	83⅝	70⅝	80¼	64⅝	70½	60½
Standard of Kansas	25	23½	24	27⅜	15	20⅞	15⅜	36½	26½
Standard of Kentucky	25	132¼	132⅝	136½	122⅛	125½	111½	134⅜	107
Standard of Nebraska	25	44¼	44⅜	45⅛	40½	49½	43	51⅛	42
Standard of Ohio, com.	100	78½	78½	79⅜	72	81½	72	362	192½
Swan & Finch, com.	25	18	19	17⅜	16½	21	11½	21	18
Vacuum Oil	25	85	†86⅜	154	136⅜	147	95⅛	109⅜	94⅛
Miscellaneous									
Gulf Oil Corp. of La.	25	140½	128	142½	101⅛	116	86¼	95	82½

*Bid, no sales. ‡Old stock. †New stock.

Quotations furnished by W. J. Wollman & Co.

The Oil and Gas Journal weekly average price of 20 representative petroleum stocks listed on the New York Exchange and New York Curb was as follows:

May 14	68.74	Apr. 9	67.21	Mar. 5	62.56
May 7	68.15	Apr. 2	65.28	Feb. 27	62.54
Apr. 30	71.31	Mar. 26	64.48	Feb. 20	60.77
Apr. 23	68.76	Mar. 19	63.79	Feb. 13	61.02
Apr. 16	69.43	Mar. 12	62.07	Feb. 6	62.03

tribution is equivalent in amount to that previously paid on the old stock.

Transcontinental Oil

Transcontinental Oil Co. reports for quarter ended March 31, 1928, net loss of $70,646 after interest, depreciation, nonproducing wells and abandoned leases, comparing with profit of $215,780 before federal taxes in first quarter of 1927. Outstanding stock amounts to 157,500 shares of 7 per cent preferred and 3,742,029 no par shares of common stock.

Income account for quarter ended March 31, 1928, compares as follows:

	1928	1927
Gross income	$2,811,985	$3,244,085
Operating expenses	2,465,286	2,639,138
Operating profit	$346,699	$604,947
Interest	164,842	138,778
Depr. and depletion	†252,503	250,389
Loss	$70,646	*$215,780

*Profit before Federal taxes. †Includes $1,919 retirement of leases.

Tidal Osage

Tidal Osage Oil Co. reports for quarter ended March 31, 1928, net income of $276,264 after taxes, interest, depreciation, depletion, etc., equivalent to 43 cents a share (par $10) earned on 631,319 shares of common stock. This compares with $2,109,365, or $3.33 a share, in first quarter of 1927.

Income account for quarter ended March 31, 1928, compares as follows:

	1928	1927
Gross earnings	$914,602	$3,028,727
Expenses	217,258	400,145
Operating profit	$697,344	$2,628,582
Other income	17,296	8,041
Total income	$714,640	$2,636,623
Interest, taxes, etc.	30,00	124,160
Depr., depletion, etc.	407,876	403,098
Net income	$276,264	$2,109,365
Dividends	315,659	4,557
Deficit	$39,395	†$2,104,808

†Surplus.

NEW COMPANY TO BUILD PLANT AND PIPE LINE

(Continued from Page 146)

Pecos City through the pipe line, the company also contemplates the movement of Hendricks crude from Pecos City to the Crystal Oil Refining Corp.'s plants in Shreveport, La.

It is understood that the Skelly-Burford pipe line will commence to handle crude oil about June 1, but the refinery of Burford Oil Co., in which Skelly Oil Co. will not have any interest, will not be in operation before August 15 or September 1.

The engineers are now engaged in perfecting the plans and purchasing equipment for the new refinery. In as much as it is going to be a permanent plant, more time will be consumed in putting the plant in operation than some of the small temporary plants which are going into West Texas.

It has been announced that, although the general executive officers of the new company will have headquarters in Shreveport, the western sales will be handled by a sales manager who will reside in Pecos City.

WILL MINE FOR OIL IN OLD OKLAHOMA FIELDS

The mining of oil in Oklahoma, a project that has interested oil operators in depleted fields for some time, will be a reality in the near future.

The Ranney Oil Mining Co., a subsidiary of the Standard Oil Development Co., of 26 Broadway, New York, has a representative in the field in the person of W. A. Chandler, who has already been in conference with Miller D. Hay of Oklahoma City, chief mine inspector for the State of Oklahoma.

The company is just now gathering up a block of properties on which mining operations will be pursued and it is understood that none of the companies that will take part in the co-operative project is connected with the Standard Oil Co. of New Jersey, which is back of the mining proposition.

It has not been announced where the first mine will be driven, but it is generally believed that it will be in one of the old shallow districts northeast of Tulsa.

The Ranney systems of mining have been described in detail in The Oil and Gas Journal on several occasions. The system which it is planned to put into effect in the first mining project will be one involving 640 acres of known oil property. A shaft will be driven in the center of the property to a depth below the pay sand and shale underlying the sand. When the mine is completed a tunnel 10 feet wide and 8 feet high will have been built along the four sides of the 640 acres with three lateral tunnels running say north and south across the subterranean property, and three others running say east and west, with the shaft in the center of this gridiron of tunnels.

The "oil wells" will be drilled from the roofs of the tunnels upward through the shale and into the bottom of the sand body, and in a square mile there will be 5,280 of these "oil wells," each of which will be about 2 or 2½ inches in diameter. On each 40 acres of the property pressure wells will be drilled from the surface down into the oil sand and these will be used to force natural gas or air under high pressure into the sands which in turn is expected to force the oil downward and into the "oil wells" which will be connected to a system of pipes which run to the shaft, up which the oil will be forced to the surface.

The machinery to be used and the equipment of the workmen will all be such as to conform to the rules and regulations governing the safety of men working in mines where there is danger from gas.

The projectors make the claim that the system is safe and they have no doubt about its efficiency.

Mr. Chandler expressed the opinion that this system would recover as much as 80 per cent of the oil left in already developed sands.

It will take about 18 months to construct such a mine to completion.

THE LAMP SEES A BIG SUPPLY OF CRUDE OIL FOR NEXT FIVE YEARS

The oil industry has settled down to a more secure future and can now plan, therefore, free from the worries that in the past have beset it, due to the fear of a disturbance which would result from a shortage of the raw material," say an article in the current issue of The Lamp, the house organ of the Standard Oil Co. of New Jersey.

"Seventy years after the Drake well," the article continues, "it is now time to look upon the petroleum industry as a permanent institution which presents no undue hazard as to the future supply of its raw material.

"The industry," it is explained, "faces today a new set of conditions under which it may never again lack for raw material. Without any important exception, production has shown tremendous gains each year, and now, with the world's consumption at new record levels, the problem is not one of meeting demand but of taking care of overproduction.

"In this early part of 1928 the situation may be roughly summarized in this way: The industry will again make new high records in the production of crude oil, and there will also be a new high record in the consumption of its products; the producer will again run ahead of the refiner and increase the surplus aboveground. The percentage rate of increase in consumption will not be as high as formerly, for the reason that unit consumption is being decreased by better efficiency in the use of products.

"In respect to the most important product, gasoline, the development and sale of higher compression motors which will require considerably less fuel per mile of car operation is just fairly started. One or two manufacturers of motor cars who rather timidly put forth higher compression engines as an optional feature were swamped with requests for that model."

The article points out that higher compression motors may effect a 10 per cent saving in fuel and that there has been marked increased efficiency in oil use by industrial plants, railway, marine transportation, etc.

"There may be a large increase in the number of motor cars without a corresponding increase in consumption of gasoline, and a further development of industrial and domestic oil heating without proportional additions to fuel requirements. Without making it as a prediction, it may be said that indications are that this year's total increase in consumption will not exceed 5 per cent, and that this is a fair estimate for the average rate of yearly increase over the next five years."

On that basis, it states, the oil outlook for the next five years is little dependent on new fields. In 1927, world's crude oil production was slightly above 1,250,000,000 bbls. and consumption about 1,180,000,000 bbls. "If the 5 per cent increase is borne out, then in 1932 we shall consume almost 1,500,000,000 bbls. of oil. This is a staggering quantity, but it is exceeded by the probable supply." Allowing for apparent conservative increase in West Texas, Venezuela, Colombia, Argentine and Mesopotamia, "it seems reasonable to expect a total production in 1932 larger by some millions of barrels than the probable consumption."

Regarding the refinery requirements, the article pointed out that if crude oil supply should become exhausted, the major part of automotive and power fuels could be derived from treatment of coal and oil shales and that the oil industry would be ready to shift its facilities to meet the new sources of supply.

Late Fields

(Continued from Page 38)

It was a small dry gasser at 4,729 feet, figured to be about 20 feet deeper subsea than the discovery producer. It is a mile east and a quarter mile south of that well and was an old well drilled deeper having been deepened from 4,371 feet where it was a 5,000,000-foot gasser 13 months ago.

GULF COAST

HOUSTON, Tex., May 15.—Gulf Production Co. completed its No. 8 Chessom, in the Orange Pool, late Monday flowing 1,500 bbls. of pipe line oil daily from sand slightly below 4,300 feet. This is an old well deepened from sand at 3,889 feet. Rucks and associates have abandoned No. 2 Mouldoon in Brazoria County, encountering a water sand at 1,132 feet.

Gulf Production Co. drilled into salt at 860 feet in its No. 6 Sanborn, Hawkinsville, Matagorda County, wildcat.

C. A. Deware has abandoned No. 1 Lehman, Brenham, Washington County, the well has been shut down at 2,730 feet for some time. The Sun Oil Co. abandoned its No. 1 Prather on the east edge of Spindletop, encountering heaving shale at 4,571 feet.

BENZOL PRODUCERS MEET

A preliminary meeting of the benzol producers of France, Germany, Luxemburg and the Saar was held at Luxemburg, with the idea of forming an international agreement to promote the use of a benzol-gasoline mixture. It is proposed that a mixture containing 20 per cent benzol and 80 per cent gasoline be established as a standard and that the benzol producers in the countries involved, and the importers and refiners of gasoline join forces in promoting its use.

TEXAS PIPE LINE CO. ANNOUNCES PLANS

(Continued from Page 38)

for some time has felt the need of increasing the capacity of its system to the Gulf Coast, in addition to the burden of Oklahoma and North Texas crude.

The Dallas-Port Arthur line from Corsicana south takes care of the East Central Texas and Gulf Coast fields. The latter two districts alone take up much of the capacity of the already looped system.

The new line across to San Augustine not only will provide more ready movement for fields north of Corsicana, but also will eliminate the necessity of looping again the entire Dallas-Port Arthur system, and at the same time make more efficient operation of the Louisiana-Arkansas system by utilizing some of the surplus capacity there.

WIDER USE OF PETROLEUM EXTENDERS BY INDUSTRIES

NEW YORK, May 10.—The use of petroleum extenders in the varnish and lacquer industry has shown a considerable increase during the past year, according to the annual report of the New York Paint Club, which says:

"The interest in the petroleum extenders increased markedly in 1927, first on account of the non-toxic nature of their vapor, and second, their reasonable prices.

"A petroleum distillate, having an evaporation range close to toluol, increased in demand and use during 1927, and for those producers who have balanced their formulas to it, it is increasing in popularity. This grade of gasoline is used in denaturing the specially denatured alcohol known as specially denatured alcohol No. 44-A.

"A petroleum distillate, having an evaporation range close to xylol, has proved invaluable in brush lacquer formulation. It is nontoxic, has a flash point about 80 degrees Fahrenheit (thus eliminating the necessity of red label), is tolerated well by monoethyl ether of ethylene glycol, and assists as a retarder.

"A petroleum distillate having an evaporation range close to benzol, is now being demanded for special purposes, and is being offered.

"The turpentine substitute grade of petroleum naphtha was in large demand during 1927. Supplies were abundant and competition keen, hence prices have been as low as any time in recent years. Price range, 13½ cents to 16½ cents per gallon in small lots.

"Other grades of petroleum products used by the paint and varnish industry have been in ample supply at low prices.

"The outlook for 1928 is for continued development of new solvents and uses for them, and it is expected that increasing amounts of better lacquers will be produced at reasonable costs."

NEW REFINERY IN TUXPAM

It is reported by the Trens Agency that a refinery is to be built in El Alamo district of the Tuxpam Field for producing gasoline from natural gas under a pressure system.

TO MAKE OIL FROM LIGNITE

The Societe Francaise pour la Fabrication des Essences Petroles is about to operate lignite mines and make petroleum and other hydrocarbons from lignite. A factory is being built near the Saint Julien de Peyrolas lignite mines in the Gard Department, which is expected to be ready for operation in about six months.

NEW SHALE PLANT

According to the Wall Street Journal, a company is planning to construct a plant in eastern Colorado for the purpose of distilling gasoline and other oil products from oil shale of that section.

Technical Questions Answered

BY CHARLES K. FRANCIS, PH.D., TECHNICAL EDITOR

This department of The Oil and Gas Journal is devoted to the manufacturing branches of the oil industry.

Those connected with the refining of crude petroleum, the manufacture of natural gasoline and closely allied industries are invited to submit their problems to Dr. C. K. Francis, technical editor. The department was created for the purpose of aiding managers, superintendents, engineers, chemists and all those engaged in the various phases of plant operation; also those connected with the marketing and utilization of petroleum products.

Questions should be submitted in as much detail as possible so as to assure a satisfactory answer.

All inquiries should be signed and if other than the given initials are to be used please indicate the desired letters.

Questions involving patented processes, intricate formulas and calculations and estimates of costs, for obvious reasons, cannot be answered. The replies will appear on this page within a reasonable time.

PROPERTIES OF USED OILS

I wish to obtain some information about the character of oil which has been used in an automobile and shall appreciate anything you may give me on this subject?—S. H. N.

There is a recent publication, Bulletin 671, Canadian Department of Mines, by P. V. Rosewarne, which gives many details about the performance of lubricating oils in motors obtained by practical tests in cars which were driven by the owners.

The general procedure adopted was to clean the carbon from the engine, drain the oil from the crankcase and replace it with the selected oil. The owner agreed—to make careful note of the general operation of the car, such as power, acceleration, overheating, etc.; to use as far as possible only one brand of gasoline; to use only such oil as was supplied; to return the car at the end of the test so that carbon might be removed and oil changed for another test. The oils were examined according to recognized standard laboratory methods. The viscosities reported in the table below are Redwood.

The above bulletin gives a long list of the results which cannot be included here; however, results selected from this table at random are shown below.

ANALYSES OF USED AND UNUSED OILS

Specific Gravity at 60 F.		Redwood Viscosity at 100 F.		Flashpoint F.		Carbon Residue		Dilution Per cent
Before	After	Before	After	Before	After	Before	After	After
0.932	0.927	569	430	345	175	0.46	0.85	5.5
0.894	0.894	262	202	380	145	0.38	0.76	9.5
0.933	0.911	399	297	355	190	0.28	0.37	2.0
0.933	0.908	399	233	355	135	0.28	0.19	2.5
0.894	0.895	262	312	380	180	0.38	0.94	5.0
0.906	0.896	370	265	355	140	...	0.82	8.5
0.892	0.890	267	217	390	135	0.45	0.65	4.5
0.932	0.912	569	153	345	150	0.46	0.46	13.0
0.904	0.880	228	69	385	100	0.33	0.28	19.5
0.899	0.906	293	305	375	190	0.42	0.68	0.5
0.895	0.893	292	137	395	115	0.42	0.76	10.5
0.913	0.901	502	213	420	150	0.38	1.23	12.0

The method and apparatus used for determining crankcase dilution were described on this page in The Oil and Gas Journal, July 21, 1927. The methods for the reclamation of used lubricating oils are described by Herschel and Anderson, Technologic Paper No. 223, Bureau of Standards, Washington, D. C.

WHALE OIL CONSTANTS

What uses are made of whale oil? What are the tests? Is there more than one grade of this oil?—A. G.

There are several grades of whale oil, it being classified largely on color. The best quality, No. 0, is almost colorless with a slight yellow tinge, and has a trace of fishy odor. The next grade, No. 1, is somewhat darker in color and has a distinct fishy odor. This grade, which constitutes about 60 per cent of the whale oil, is frequently filtered and bleached. The residue, after the separation of the No. 1 oil, is further digested and yields orange to light brown oil, No. 2 grade. The No. 3 grade, dull brown in color, is usually obtained by treating the bones. There is a No. 4 grade which may be prepared from decomposed flesh and residues; it has a very bad odor and is almost black.

The specific gravity of whale oil ranges from 0.918 to 0.930; between 24 and 20 A.P.I. The iodine number is not at all constant, being from 115 to 155. The No. 1 oil flashes at 570 Fahrenheit and has a fire point of 640 Fahrenheit. The Saybolt viscosity at 100 Fahrenheit is 166 seconds. Refractive index 1.4691 at 77 Fahrenheit. Saponification number 188-194. Acid percentage from 2 to 10.

While this oil was formerly compounded with mineral oils, it is but little used for lubricating purposes now. Some car oils and special greases contain small quantities of whale oil, seldom over 5 per cent. One great objection to it is the tendency to the formation of organic acids. The best grades of whale oil are now used for the preparation, by hydrogenation, of edible products and in the manufacture of fats suitable for making soap. Some whale oil is used in the tanning industry and as constituent of leather dressings. A small quantity continues to be used as a burning oil in lamps and stoves.

PARAFFIN WAX IN OIL-WAX MIXTURES

Information is desired concerning laboratory methods for determining the percentage of paraffin wax in oil-wax mixtures. Please refer me to what literature is available and state what solvents are used in the different methods, and indicate which method is accepted as standard?—C. A. M.

The methods used for the determination of wax in oil depend upon the solubility of paraffin in certain solvents and the solidification of the wax at low temperatures. Some laboratories make the separation and determination by means of a small filter press; the chilled oil being passed through the press under pressure and the wax cake purified as in the sweating operation.

One of the best-known analytical methods is that of Holde as described in Hydrocarbon Oils and Saponifiable Fats and Waxes, Holde-Mueller, page 107, which is slightly modified as outlined below.

One hundred grams of the oil are distilled to 300 Centigrade, then a weighed receiver is put into position, without a condenser or with hot water in the condenser, and the distillation continued until coke forms in the distilling vessel. The quantity of distilled oil is determined.

From 5 to 10 grams of the distillate are dissolved at about 65 Fahrenheit in a mixture equal parts ether and absolute alcohol to a clear solution, then cooled to —20 Centigrade, just enough alcohol-ether mixture added till all oily drops are dissolved and only paraffin flakes visible. The precipitated paraffin is then filtered on a funnel surrounded with a freezing mixture, and washed free from oil by means of cooled alcohol-ether. The filtrate is evaporated and the process of precipitation repeated. The combined residues are then washed into a weighed glass dish with hot benzol or naphtha and the solvent evaporated. The paraffin is carefully washed with cooled alcohol-ether until 5 cubic centimeters of the filtrate will give no residue on evaporation, or only a trace of material solid at room temperature is obtained. Too prolonged washing is to be avoided. If on cooling, the paraffin is seen to be hard, it is heated at 105 Centigrade for 15 minutes and weighed after drying in a desiccator; if the paraffin is soft, with melting point under 45 Centigrade, it should be dried for several hours in a vacuum desiccator at 50 degrees before weighing.

CORRECTION FOR BAROMETRIC PRESSURE

Can you furnish or tell me where I can find the table showing the corrections to be made on the distillation points for the barometric pressure? Is it necessary that this kind of a correction be made on export shipments?—A. F.

You will find this table in Technical Paper 323B, United States Bureau of Mines, and in the Report of D-2, American Society for Testing Materials.

As indicated in the table below, the correction is usually so small that it is seldom made.

The actual barometric pressure shall be ascertained and recorded, but no correction shall be made except in case of dispute. In such cases the temperature points shall be corrected to 760 mm (29.92 in.), by the use of the Sydney Young equation, as follows:

For centigrade readings:

$$C_c = 0.00012\ (760 - P)\ (273 + t_c)$$

For Fahrenheit readings:

$$C_f = 0.00012\ (760 - P)\ (460 + t_f)$$

in which C_c and C_f are, respectively, corrections to be added to the observed temperature t_c or t_f, and P is the actual barometric pressure in millimeters of mercury. The following table is a convenient approximation of the corrections as calculated by the above equation.

Temperature Range Deg.C	Deg.F	Correction Per 10 mm. Difference in Pressure* Deg.C	Deg.F
10- 30	50- 86	0.35	0.63
30- 50	86-122	0.38	0.68
50- 70	122-158	0.40	0.72
70- 90	158-194	0.42	0.76
90-110	194-230	0.45	0.81
110-130	230-266	0.47	0.85
130-150	266-302	0.50	0.89
150-170	302-338	0.52	0.94
170-190	338-374	0.54	0.98
190-210	374-410	0.57	1.02
210-230	410-446	0.59	1.06
230-250	446-482	0.62	1.11
250-270	482-518	0.64	1.15
270-290	518-554	0.66	1.19
290-310	554-590	0.69	1.24
310-330	590-626	0.71	1.28
330-350	626-662	0.74	1.32
350-370	662-698	0.76	1.37
370-390	698-734	0.78	1.41
390-410	734-770	0.81	1.45

*To be added in case barometric pressure is below 760 mm.; to be subtracted in case barometric pressure is above 760 mm.

GRAVITY A.P.I. FOR OILS HEAVIER THAN WATER

Will you kindly advise us as to the method for obtaining the specific gravity of fuel oil from degrees A.P.I. given if the reading is less than 10 degrees Baume, that is for oil heavier than water? Does the modulus 141.5 hold for a range of 2 to 10 degrees A.P.I.?—G. W. S. The discussion below is from Dr. R. P. Anderson, technologist, American Petroleum Institute. The question being repeated for convenience.

"My attention has been called to a question (from G. W. S.) dealing with the specific gravity of heavy fuel oil which appears in The Oil and Gas Journal, April 12, and it occurs to me that possibly the inquirer had in mind the use of the A.P.I. scale for petroleum oils heavier than water rather than the use of the Baume scale especially designed for these heavier liquids.

"Apparently some oil companies have carried this scale down to 0 degrees A.P.I. in their own work, and I believe that some hydrometers have been made covering the range of 0 degrees to 10 degrees A.P.I.

"This development has reached the point where the table which is to appear in the proposed tentative method for determining the gravity of petroleum products by means of the hydrometer to be recommended by Committee D-2 at the annual meeting of the A.S.T.M. covers the range 0 degree to 100 degrees A.P.I. A copy of this table is enclosed herewith for your information.

"Of course, you will realize that there is nothing official about this but the new tentative method will soon appear as a preprint of the report of Committee D-2, and no doubt the method will be adopted as tentative at the June meeting of the A.S.T.M.

"As I read over the question again, it seems to me that the questioner should have used the term 'A.P.I.' in the phrase 'the reading is less than 10 degrees Baume.' "

Table Containing Specific Gravities, Pounds Per Gallon, and Gallons Per Pound, Corresponding to Degrees A.P.I.

Degrees A.P.I.	Specific Gravity at 60/60 F.	Pounds per Gallons at 60	Gallons per Pounds at 60
0	1.0760	8.962	0.1116
1	1.0679	8.895	0.1124
2	1.0599	8.828	0.1133
3	1.0520	8.762	0.1141
4	1.0443	8.697	0.1150
5	1.0366	8.634	0.1158
6	1.0291	8.571	0.1167
7	1.0217	8.509	0.1175
8	1.0143	8.448	0.1184
9	1.0071	8.388	0.1192
10	1.0000	8.328	0.1201
11	.9930	8.270	0.1209
12	.9861	8.212	0.1218
13	.9792	8.155	0.1226
14	.9725	8.099	0.1235
15	.9659	8.044	0.1243
16	.9593	7.989	0.1252
17	.9529	7.935	0.1260
18	.9465	7.882	0.1269
19	.9402	7.830	0.1277
20	.9340	7.778	0.1286
21	.9279	7.727	0.1294
22	.9218	7.676	0.1303
23	.9159	7.627	0.1311
24	.9100	7.578	0.1320
25	.9042	7.529	0.1328
26	.8924	7.481	0.1337
27	.8927	7.434	0.1345
28	.8871	7.387	0.1354
29	.8816	7.341	0.1362
30	.8762	7.296	0.1371

Beginning with 10 A.P.I. this table is an abridgement of Table 5, United States Bureau of Standards Circular 154, National Standard Petroleum Oil Tables, which contains data for each 0.1 A.P.I. from 10 to 100 A.P.I. The data from 0 to 9 A.P.I., inclusive, have been added to extend the use of the A.P.I. scale to petroleum oils having a specific gravity slightly greater than unity.

Deep Well Drilling in Eastern Field

Difficulties Encountered and How They Are Met in Cable Tool Operations in Search of Deep Gas Sands

By J. French Robinson*
Peoples Natural Gas Co.

The theory and practice of deep well drilling is not unlike the theory and practice of ordinary drilling. Great care must be exercised in selecting locations. One of the main features is accessibility, as larger machinery, tools, more fuel, more water, etc., are required. Most of the deep wells in the Appalachian Field have required from one to seven years for completion. Delays have been numerous due to various causes. A few of the more vital of these will be dealt with in this article.

After making a thorough and comparative study of the available data on deep well drilling in this section, we have found that the difficulties encountered, are, in general, very similar over the entire Appalachian Field. For this reason much of the data and description in this article will be confined to the Peoples Natural Gas Co.'s wells, one of which is the Peoples Natural Gas Co. well, No. 1,842 which was drilled to a depth of 7,756 feet with cable tools, and was until recently the deepest well in the world. This well is located along the Lincoln Highway, about 4 miles west of Ligonier, near McCance, Westmoreland County, Pennsylvania. Geologically, it is located near the apex of the Chestnut Ridge anticline. Figure No. 1 will show the relative locations of deep wells drilled in the Appalachian Field, together with general structure covering the same. Table No. 1 gives detail information of the deep wells drilled in this field. The numbers on the table correspond with numbers on Figure No. 1.

Preparing the Way

After having definitely decided upon the exact location for drilling a deep well, one of the first things to be done is to clean off the surrounding territory and provide a good size storage yard. Prior to the building of the rig, a cellar is dug, usually about 8 feet square and to a depth of several feet, or until a solid rock base is encountered. A ditch is provided on the lower side of the cellar, so as to guarantee thorough drainage; the object of the cellar being to provide a suitable place for the rings and slips which support the separate strings of casing that are to be placed in the well. The cellar also provides ample space to allow the installation of gates in case a large flow of gas is encountered.

The derrick used in drilling deep wells is similar to that used with the standard rig, with the exception that it is larger and heavier throughout. The derrick is 94 feet high, 26 feet square at the base and about 6 feet square at the top. It is equipped with a crow's nest top 14 feet square, which is to provide space for men to work with safety when handling heavy material.

The steel crown which is to support the crown pulley is made extra strong by using four heavy 12-inch I-beams. Attached to these beams are five pulleys which are used to complete the set of blocks used in lowering the heavy strings of pipe into the hole. All of the lumber used in the construction of this rig is of first grade white oak, and contains approximately 6,000 feet of lumber.

The band wheel is 13 feet in diameter with a 7½-inch crankshaft. It is equipped with a four-grooved 7-foot tug wheel. The bull wheels are 8 feet in diameter and have a 27-inch shaft. Attached to the bull wheel near either end are two brake wheels with 16-inch steel brake bands. The walking beam consists of a piece of timber 24 by 32 inches by 28 feet long and is of the very best quality of white oak. Some deep wells are equipped with one 80-horsepower boiler, while others have two or more small boilers, depending upon the local conditions. A 30 to 70-horsepower engine is used in most of the deep drilling in the Appalachian Field.

Standard drilling tools are used throughout with the exception of a few special tools; one of which is the jar-type bailer. The jar-type bailer is the usual bailer fitted with a set of small jars made in connection with the bail, and has been found very helpful in jarring the bailer loose when stuck by cavings or crooked hole.

Another special tool is the dump bailer. It is constructed with a plug valve attached to a rod in which a link with about 12-inch trip is constructed. The rod is attached to the bail. The bailer is fitted with a latch and when the bailer is set down, engages the bailer tube and, when raised, lifts the tube of the plug valve, giving the bottom of the bailer a full opening. The dump bailer was used for lowering water into the hole to drill with, and for placing cement in same to fill cave holes.

Uncommon Tools

As drilling continues, conditions arise requiring different types of tools not commonly used. These tools are designed and make as the emergency requires.

Most of the deep wells are drilled with seven-eighths-inch steel cable to a depth of perhaps 6,000 feet. From this point, a tapered seven-eighths-inch by 1-inch wire line is used.

The sand line is a five-eighths-inch wire cable throughout the drilling operation. The size of the hole drilled in starting a deep well varies from 24 inches to 13 inches, depending largely upon the ideas and experiences of the management of the organizations interested. The Peoples Natural Gas Co.'s well No. 1,842 was started with a 16-inch hole. This size hole was drilled to a depth of 60 feet. Figure 2 illustrates the manner of casing the deepest cable tool well in the

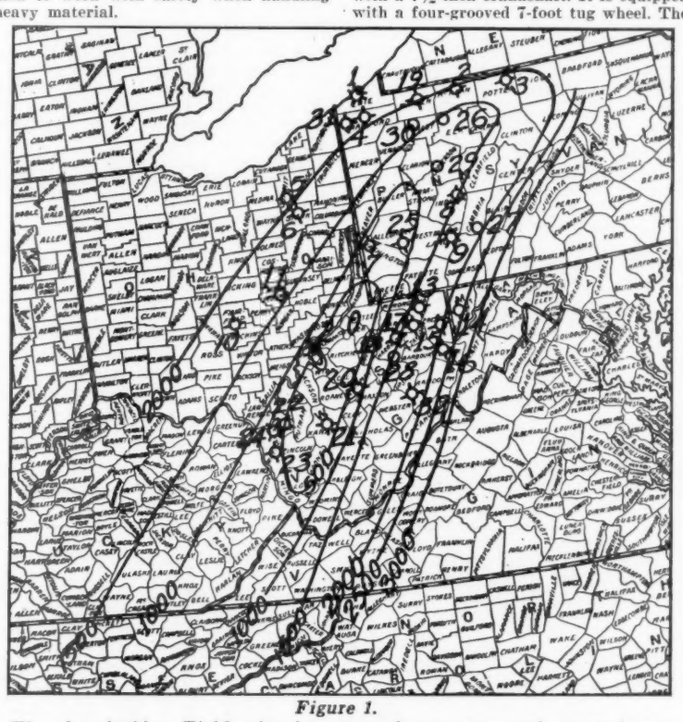


Figure 1.

The Appalachian Field, showing general structure and approximate location of deep wells. The structure contours are drawn on the Pittsburgh Coal. Elevations above sea level. Interval 500 feet. See Table 1 for deep well data. The legends used on the map are drilling wells represented by a circle, oil wells by solid black circles, dry hole by four-pointed circle, and gas well by 8-pointed circle.

*Before meeting of the Eastern Division of Development and Production Engineering, American Petroleum Institute, at Bradford, Pa., May 17.

TABLE 1—SUMMARY OF DEEP-WELL OPERATIONS IN THE APPALACHIAN OIL AND GAS FIELD

				Carboniferous				Devonian						Silurian					
						Berea		Bradford or Benson of W. Va.		Corniferous Lime		Oriskany		Clinton Sand		Lower or Gray Medina			
Drilled by	Location	Date Completed	Elevation	Pittsburgh Coal		Top	Bottom	Top	Bottom	Top	Bottom	Top	Bottom	Top	Bottom	Top	Bottom	Total Depth	Remarks
City of Erie	Erie County, Pa.	1910	....	.....		....	....	....	....	....	....	....	....	2,260	2,320	2,470	2,493	3,572	Gas well
United Nat. Gas Co.	McKean County, Pa.	....	1,585	.....		....	....	1,120	1,198	4,065	4,135	4,135	4,155	5,320	5,560	5,642	5,760	5,760	Dry hole
	Potter County, Pa.	....	....	.....		....	....	....	....	....	....	....	....	....	....	....	....	....	Drilled through Medina; dry hole
United Nat. Gas Co.	Crawford County, Pa.	1921	1,170	.....		....	....	....	....	2,852	3,025	3,025	3,033	....	....	....	....	3,633?	Dry hole
	Akron, Summit Co., Ohio	1905	....	.....		300	385	....	....	....	....	....	....	3,601	3,606	....	....	3,789	
	Canton, Stark Co., Ohio	....	....	.....		....	....	....	....	....	....	....	....	....	....	....	....	3,250	Dry hole
Peoples Nat. Gas Co.	McDonald, Wash. Co., Pa.	1917	1,050	Starts 130' below		1,610	1,612	4,100	4,170	6,008	6,045	6,045	6,315	....	....	....	....	7,248	Dry hole in deep sand
Phillips Gas Co.	Indiana County, Pa.	1920	....	.....		1,015	....	....	....	....	....	6,860	6,950	....	....	....	....	7,003	Dry hole in deep sand
Peoples Nat. Gas Co.	McCance, Westm'd Co., Pa.	1925	1,121	.....		388	475	2,470	2,488	6,786	6,807	6,807	7,185	....	....	....	....	7,756	Gas
Federal F. & G. Co.	Lancaster, Ohio	....	....	.....		442	467	....	....	....	....	....	....	2,075	2,088	....	....	2,088	
Zanesville O. & G. Co.	Muskingum County, Ohio	....	....	.....		1,010	1,033	....	....	....	....	....	....	3,709	3,747	....	....	3,805	
Hope Natural Gas Co.	Wood County, W. Va.	1919	1,256	.....		905	906	....	....	....	....	4,499	4,595	....	....	....	....	4,597	Oil
Hope Natural Gas Co.	Monongalia Co., W. Va.	1919	....	Starts 2,000' below		....	....	....	....	....	....	....	....	....	....	....	....	5,267	Dry hole
Pittsburgh Syndicate	Garrett County, Md.	1922	2,400	.....		....	....	....	....	....	....	....	....	....	....	....	....	5,250	Dry hole
Hope Natural Gas Co.	Preston County, W. Va.	1925	2,020	.....		....	....	1,456	1,495	....	....	4,312	....	....	....	....	....	4,900	Dry hole
Parsons Pulp Co.	Tucker County, W. Va.	....	1,650	.....		....	....	....	....	3,825	3,845	3,980	4,060	....	....	....	....	4,250	Dry hole
Hope Natural Gas Co.	Marion County, W. Va.	1919	1,201	Starts 850' below		1,000	1,025	3,420	3,428	6,955	7,018	7,018	7,037	....	....	....	....	7,579	Dry hole
Hope Natural Gas Co.	Harrison Co., W. Va.	1918	1,164	Starts 200' below		1,512	1,540	4,166	4,167	7,363	7,386	....	....	....	....	....	....	7,386	Dry hole
	Warren County, Pa.	....	....	.....		....	....	....	....	....	....	....	....	4,600	....	....	....	5,000	
Hope Natural Gas Co.	Gilmer County, W. Va.	1917	875	.....		2,300	....	....	....	....	....	....	....	....	....	....	....	5,648	Dry hole
Edwards Oil Co.	Kanawha County, W. Va.	....	....	.....		2,093	2,105	....	....	4,945	5,035	5,035	5,045	....	....	....	....	5,595	Dry hole
Nixon Oil & Gas Co.	Cabell County, W. Va.	1924	....	.....		2,123	2,140	....	....	....	....	3,675	3,685	4,500	4,540	....	....	4,750	
	Wayne County, W. Va.	....	....	.....		....	....	....	....	....	....	....	....	....	....	....	....	3,170	Dry hole
	Cabell County, W. Va.	....	....	.....		....	....	....	....	....	....	2,750	2,760	....	....	....	....	2,770	Dry hole
Forest Oil Co.	Allegheny County, Pa.	1898	....	Starts 130' below		1,515	1,565	3,500	3,520	....	....	....	....	....	....	....	....	5,575	Dry hole
United Nat. Gas Co.	Elk County, Pa.	....	1,841	.....		110	....	2,108	2,148	5,308	5,476	5,476	....	....	....	....	....	....	Drlg. at 7,145 ft., [illegible] 1928
U. S. Research Co.	Cambria County, Pa.	....	....	.....		....	....	....	....	....	....	....	....	....	....	....	....	....	Drlg. at 5,600 ft., May, 1928; well starts in Mauch Chunk
Reserve Gas Co.	Harrison County, W. Va.	....	1,054	Starts 100' below		1,625	....	....	....	....	....	....	....	....	....	....	....	6,824	Fish. at 6,824 ft., April, 1927; abandoned
Cliff Deemer	Jefferson County, Pa.	....	....	.....		800	....	2,800	....	....	....	....	....	....	....	....	....	....	Drlg. at 7,278 ft.
Fidelity Pet. Corp.	Tidioute, Forest Co., Pa.	....	....	.....		....	....	....	....	4,280	....	....	....	....	....	....	....	....	Drlg. at 5,652 ft., April, 1927
	Conneaut Lake, Pa.	....	....	.....		275	300	....	....	....	....	4,060	4,085	....	....	....	....	4,400	Dry hole
Hope Natural Gas Co.	Middle Fork Dist., Randolph County, W. Va.	1918	....	.....		1,700	1,725	....	....	....	....	....	....	....	....	....	....	4,949	Dry hole

world. If the various strings of casing used in this well were laid end to end the casing would reach 3.43 miles, and would have a total weight of 247 tons.

Overcoming Difficulties

The sands encountered in this well are shown on Figure 2. It possibly would be of interest to note that this well was started below the Big Lime horizon, which is being quarried on the mountain just above the well, and about the middle of the Big Injun sand. The well was drilled to a depth of 7,756 feet. After drilling to a considerable depth, it was found that both the cable and the casing were being damaged by the friction caused by the cable upon the casing. This was

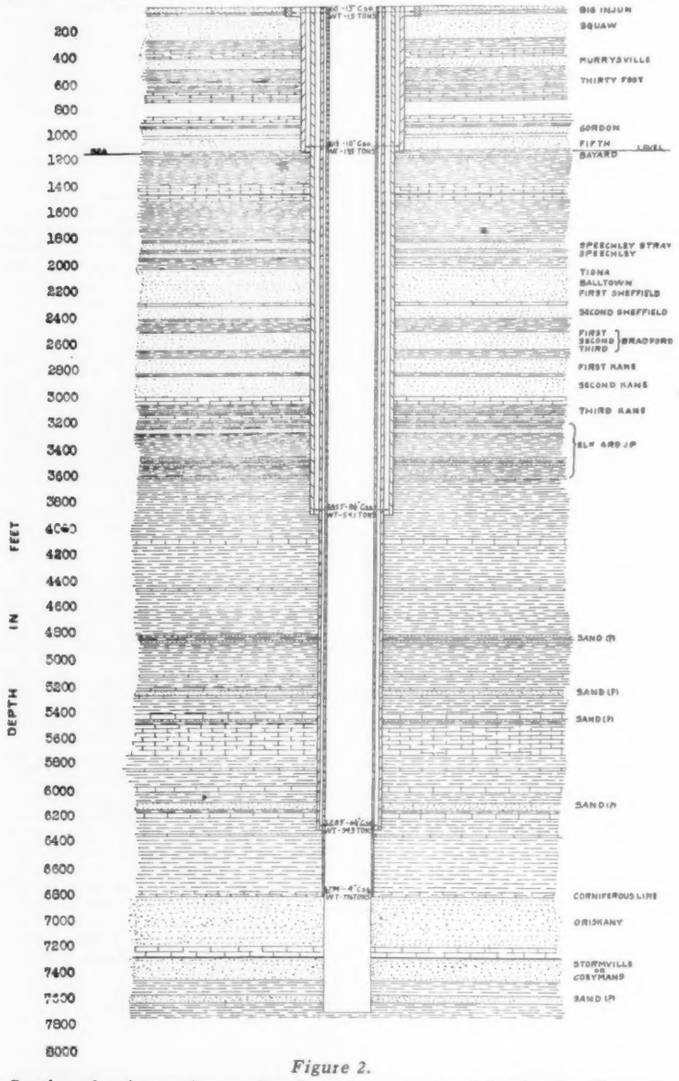


Figure 2.

Section showing casing used and strata encountered in Peoples Natural Gas Co.'s deep test along the Lincoln Highway near Ligonier, Westmoreland County, Pennsylvania, designated in this article as "Well No. 1842."

partially overcome by keeping the drilling cable thoroughly greased and lubricated. The grease is applied to the drilling cable and protects both it and the casing.

Many Bad Cavings

Many bad cavings are encountered in drilling deep holes, especially in those which reach a depth nearing the Corniferous lime horizon. Just above the Corniferous lime is a black, soft, runny material, known as the Marcellus black shale. Bailing of this material from the hole has been done for a month at a time. This material becomes exceptionally soft and annoying when water is allowed to gather on it; therefore, in order to keep the water from the walls of the well, it is necessary to lower the water in the hole by means of a bailer. Sometimes it is necessary to fill many of these large caves with cement in order to shut off the soft material from running into the hole.

It has been noted in deep well drilling that the temperature of the earth increases quite regularly as its crust is penetrated. Table No. 2 shows the comparison of temperatures taken in several of the deep wells drilled in the Appalachian Field.

Handling the Casing

It is a very important part of deep drilling to properly place a long and heavy string of casing in the hole. These long strings of pipe, when connected together, will stand much more tension than they will compression; therefore, if they are allowed to stand on end when

TABLE NO. 2—TEMPERATURE TESTS

Depth in feet	Map No. 12 H.N.G. No. 6,174 (Volcano)	Map No. 15 H.N.G. No. 6,400 (Terra Alta)	Map No. 28 Reserve No. 918 (Smith)	Map No. 9 P.N.G. No. 1,842 (Ligonier)	Map No. 7 P.N.G. No. 770 (Geary)	Map No. 18 U.N.G. No. 4,190 (Goff)	Map No. 17 H.N.G. 4,304 (Lake)	Map No. 26 U.N.G. No. 3,700 (Lamont)	Foster & Brindle (McKeesport)	Depth in feet
100	52 0	53.2	57 0	50.7	57.0	55.6	53 7	46 0	....	100
250	55 5	54	58 0	....	....	....	56 4	....	....	250
500	57.4	56.1	60.3	55.8	59.9	60.2	59.9	51.3	....	500
750	60.1	59.3	60.0	....	....	....	62.5	....	....	750
1,000	64.5	62 9	65.4	63.0	63.1	65.3	65.6	58.0	....	1,000
1,250	66.0	67.0	65.5	....	....	....	68.6	....	....	1,250
1,500	68.8	70.0	68.2	70.6	68.1	67.8	71.8	63.9	....	1,500
1,750	71.5	73.0	68.2	....	....	....	74.8	....	....	1,750
2,000	75.9	77.2	76.1	78.6	75.0	74.9	78.4	70.9	....	2,000
2,500	83.6	87.3	81.0	85.9	81.1	81.0	86.0	77.6	....	2,500
3,000	91.0	96.0	88.0	93.0	86.9	87.6	90.5	85.3	85.1	3,000
3,500	98.9	108.5	93.5	100.8	95.5	93.8	95.4	97.8	....	3,500
4,000	106.0	115.6	100.0	107.8	103.1	100.0	104.5	101.8	....	4,000
4,500	112.5	....	106.5	117.2	109.2	107.2	111.4	110.1	....	4,500
5,000	117.5	....	107.0	127.4	119.8	114.2	120.7	119.0	....	5,000
5,250	122.0	....	....	....	....	....	....	....	....	5,250
5,400	....	....	....	....	....	....	129.2	....	....	5,400
5,500	....	....	120.5	137.8	132.0	122.3	....	130.0	....	5,500
6,000	....	....	132.5	148.7	140.0	132.1	....	....	....	6,000
6,500	....	....	....	158.3	142.8	143.2	....	....	....	6,500
7,000	....	....	....	....	145.0	153.2	....	143.0	....	7,000
7,250	....	....	....	....	....	157.7	....	....	....	7,250
7,310	....	....	....	....	....	....	....	....	....	7,310
7,350	....	....	....	....	....	....	....	....	....	7,350
7,630	....	....	....	177.0	....	....	....	....	....	7,630

into the hole. The bottom of the hole being determined, the implement is raised until the side lugs catch on the bottom of the casing, which gives the exact distance from the bottom of the hole to the bottom of the casing.

In order to handle efficiently, the long and heavy strings of pipe that are necessary to run in the deep wells in the Appalachian Field, a five-sheave, 60-inch casing block, together with the five pulleys placed on the top of the derrick, referred to previously, are used to complete a set of blocks. A 1½-inch casing line, a single link elevator, and ring and slips complete the casing outfit. The above outfit was used in running 6,289 feet of 30-pound, 6¼-inch casing in the Peoples Natural Gas Co.'s well No. 1,842, with an approximate weight of 188,670 pounds.

Another difficulty encountered in deep drilling in the Appalachian Field is that of a sloped or slanting hole. It is due to the steep slope of the anticlines and their narrow apexes, that the drill gets started off a vertical course, and is very easily led in that direction, due to the slopes of the horizons drilled through.

Trouble from crooked holes has been experienced by many of the deep wells in the Appalachian Field, and has been partially overcome by filling the hole with cement to a point where the hole began going crooked and commencing to drill at this point again. The slope of the hole was determined by the use of a container. See Figure 4. This container was made of copper and was of such a size as to fit snugly within the bottom of the bailer, the dart having been cut off. Within the container was placed

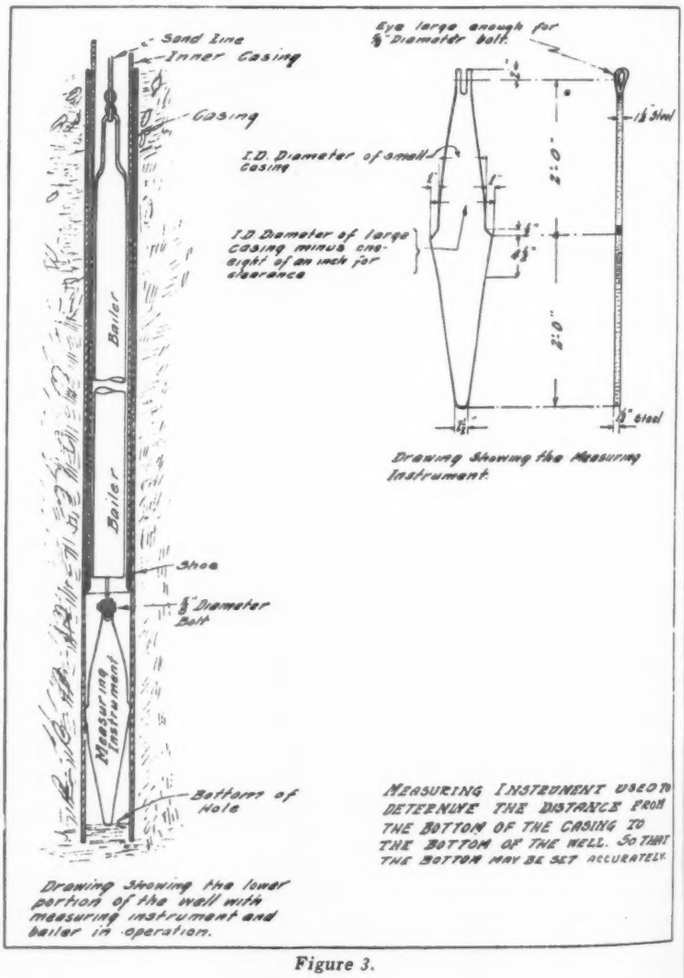

Sand Line
Inner Casing
Casing
I.D. Diameter of small casing
I.D. Diameter of large casing minus one-eight of an inch for clearance
Bailer
Bailer
Shoe
⅝" Diameter Bolt
Measuring Instrument
Bottom of Hole
Eye large enough for ⅝" Diameter bolt
1½ Steel
2'0"
4½"
2'0"
½" Steel
Drawing Showing the Measuring Instrument.
MEASURING INSTRUMENT USED TO DETERMINE THE DISTANCE FROM THE BOTTOM OF THE CASING TO THE BOTTOM OF THE WELL. SO THAT THE BOTTOM MAY BE SET ACCURATELY
Drawing showing the lower portion of the well with measuring instrument and bailer in operation.

Figure 3.

a bottle of known internal diameter, partly filled with hydrofluoric acid of a certain concentration. The bailer and contents were then lowered into the hole. The hydrofluoric acid was of such a strength that it would etch the glass after standing about 15 minutes. The bailer was then drawn to the surface, the bottle removed and the slope measured. By simple trigonometry, the slope of the hole at the point at which the bottle was run, was then calculated. In this manner a complete survey of the hole can be made, or at least that part of it that is deemed advisable.

The following table shows the results of angle tests taken in two of the Peoples Natural Gas Co.'s wells:

Angle Tests—Deep Wells

Depth in feet	P.N.G. Well No. 1,699 Offset per 100 feet	P.N.G. Well No. 1,842 Offset per 100 feet
1,900	2.0	....
2,200	4.0	....
2,700	4.5	....
3,200	4.8	....
4,000	9.7	....
4,200	9.0	....
4,500	11.7	....
4,800	13.3	....
4,950	12.0	....
5,000	8.3	....
5,100	7.8	....
5,200	6.0	....
5,300	6.8	....
5,400	8.3	....
5,500	8.4	....
5,900	12.7	4.0
6,000	6.3	6.0
6,100	12.6	10.0
6,200	....	16.0
6,300	13.0	13.5
6,400	16.0	8.3
6,500	20.0	6.3
6,600	34.3	5.0
6,700	37.6	8.5
6,800	43.0	12.7
6,850	50.0	....
6,900	....	15.0
7,100	....	23.4
7,300	....	34.0
7,450	....	45.1
7,550	....	46.3
7,650	....	52.5
7,700	....	49.0
7,750	....	45.1

Fishing Jobs Encountered

One of the many fishing jobs encountered in deep drilling is explained as follows: After setting a string of 30-pound,

ANGLE TESTING APPARATUS
USED IN DETERMING SLOPE OF HOLE

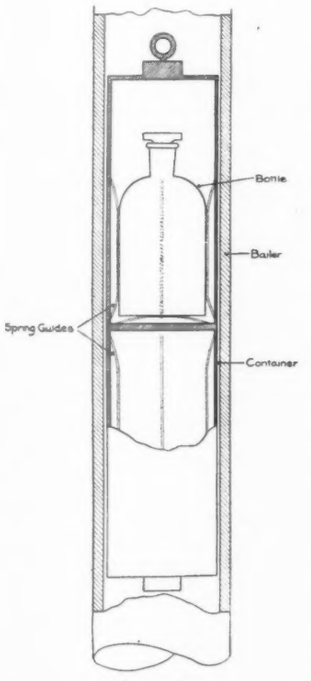


Figure 4.

6¼-inch casing in the Peoples Natural Gas Co.'s well No. 1,842, at a depth of 6,289 feet, a caving formation was encountered only a few feet below the bottom of the casing.

This cave was fought for many months without success and it became necessary to place tons and tons of cement in this hole to shut off the cave. The cement was lowered with the dump bailer and allowed to set from 10 days to two weeks. In the course of drilling through the cement, the tools were lost in the hole. We were successful in getting hold of them but could not jar them loose, evidently the cement had settled around them. The upper part of the tools were still in the casing. After many attempts to jar them loose had failed, a long spear or spud was run down along one side, the full length of the drilling tools, and still the tools refused to be moved. Since the tools extended up into the lower part of the casing, it was not practical nor possible to drill by them, and some means of getting them loose was necessary. It was decided to make a hollow drill mill, 62 feet long, which was made, and the tools telescoped completed. This drill mill was made from seamless pipe with a steel drill mill on the bottom end, and with a tool joint on the top end. This implement proved very valuable, and after running it the length of the tools, they were extracted from the hole and drilling continued. Many disastrous fishing jobs are of record. We have knowledge of several bits, bailers, strings of tools, etc., that have been cemented in the wells and the hole completed with this equipment left therein.

Another unusual handicap occurred in drilling this well. A gas was found which was very highly impregnated with sulphur and other impurities. When this gas came to the surface, and was exposed to the air, it had a very piercing effect upon the eyes and throats of the men who came in contact with it; in fact, it was so serious that several of the men working on this particular well had to go to the hospital for treatment. This difficulty was overcome by the use of gas masks.

ALUMINUM TANKS ARE BEING TESTED

(Continued from Page 38)

duction methods and tools at the plant of the Parkersburg Rig & Reel Co., Parkersburg, W. Va. In fact, they were run along with an order for steel tanks of the same size then in process.

The two tanks under test are each 500-bbls. capacity, inside diameter 14 feet 9 inches, height 16 feet 2 inches; one tank is entirely of aluminum and its alloys; the other is composite construction, lower ring and bottom being of steel, top ring and deck of aluminum. The following lists show the kind of aluminum, or aluminum alloy, parts used in each tank:

ALL ALUMINUM TANK

Upper Ring Side Sheets	Aluminum	.114" thick	Grade 3S6
Lower Ring Side Sheets	Aluminum	.114" thick	Grade Alclad 17ST
Bottom	Aluminum	.114" thick	Grade 3SH
Deck	Aluminum	.114" thick	Grade 3SH
Ladder 2"x2"x3-16" Angles	Aluminum		Grade 17ST
Side and Bottom Channels	Aluminum		Grade 17ST
Manhole Ring	Aluminum		Grade 51SW
Fittings, Pressure Gauge, Thief Hole Cover	Aluminum, Cast		No. 43
Bolts and Nuts	Aluminum		Grade 17ST

COMPOSITE STEEL ALUMINUM TANK

Bottom and Lower Ring	Steel 12 Gauge		
Upper Ring	Aluminum	.081" thick	Grade 3S6
Deck	Aluminum	.081" thick	Grade 3SH
Inside Ladder, Channels, Bolts and Nuts of Upper Ring	Aluminum		Grade 17ST

Fixtures on this tank are regular cast iron and wrought fittings.

From the above list it will be noted that several different grades of aluminum are used in this tank. Inasmuch as the Aluminum Company's symbols may not be familiar to all, the following explanation is given.

Explanation of Symbols

3S6 and 3SH—These are three-quarter hard and hard tempers of manganese-aluminum alloy containing 1 to 1½ per cent manganese, balance commercially pure (99 per cent or better) aluminum.

17ST—The well known "Duralumin." An alloy of copper, magnesium, manganese and aluminum having the strength of ordinary sheet or structural steel. Generally used for aircraft work, railway coach construction, etc.

Alclad 17ST—Duralumin with a coating of high purity aluminum on both sides, aluminum used for this coating being 99.4 per cent pure or better.

51SW—An alloy containing magnesium, silicon and aluminum. This is also classed as one of the strong alloys.

No. 43—A casting alloy containing silicon and aluminum.

It will be noted from the above that the test will include a number of the most common alloys of aluminm as well as the high purity aluminum used in coating the 17ST sheets for the bottom ring and bottom of the all-aluminum tank.

Experience has shown that brines generally will corrode aluminum to some extent. Nevertheless, it is felt that it will be worth while to test the aluminum under the actual conditions existing inside the tanks under actual operation conditions. It will be noted at this point that for the bottom ring of the all-aluminum tank a strong alloy (17ST) was used coated on both sides with high purity aluminum.

In connection with the composite tank with steel bottom and lower ring, aluminum top ring and deck, we hope by removing the main source of iron sulphide scale to study what effect this will have in prolonging the life of the steel.

Steel Tanks in Battery

New steel tanks, in battery with the aluminum tanks, will furnish a basis for comparing the life of aluminum with that of steel under the same conditions.

The rubber gaskets, customarily used in the Parkersburg bolted tank, will, we believe, to a large extent prevent the possibility of galvanic corrosion at joints between steel and aluminum plates.

It is intended to give these aluminum tanks a trial both gas tight and open to determine the effect, if any, on the gravity of the oil.

These tanks went into service about the last week in March, and unless some unexpected development takes place the test will be run about a year.

There has been some inquiry as to the matter of weight so that the following general figures may be of interest.

Aluminum, with the exception of magnesium, is the lightest of the commercial metals and its weight, volume for volume, is approximately 35 per cent that of steel.

Aluminum having a modulus of elasticity lower than that of steel, viz., 10,000,000, it is necessary where equal stiffness is required to thicken the section somewhat. In this case sheets .114 inch thick were used instead of the usual .109 inch. Taking this into consideration, the all-aluminum tank will weigh 2,350 pounds, against 6,300 pounds for the standard steel tank of the same size, or 37.3 per cent.

Arrangements have been made to keep careful records concerning the character of oil, gas and water, temperatures, etc. Later on it is hoped to compile this data together with the results in a complete report of the test to be presented to the industry.

OKLAHOMA PRICES CONTINUE UPWARD

(Continued from Page 28)

at many points where prices had been below normal, but there has been no general advance that will equalize the 1½-cent to 1¾-cent advance made in refinery prices since the first of the year.

The average advance in retail prices over the United States as shown by the average price in 50 representative cities has been three-quarters cent. Jobbers have anticipated a tank wagon advance and purchased excess material during the first three months of the year as stocks. There has been little resistance to refinery price advances for this reason. It is probable, however, much more resistance will be seen as prices are forced to 7½ cents. Several refiners have in mind going from 7¼ cents by the close of the week and several others are going to post 7⅜ cents as their minimum for the 58-60 U. S. Motor grade.

Gasoline and Naphthas

Exporters continued to take material from the Mid-Continent during the past week, but the amount was not as large as during previous weeks. Sixty cars of 58-60 U. S. Motor gasoline and 1,250,000 gallons of 60-62 390 endpoint gasoline were taken out of North Texas. This removed practically all material readily offered.

The weighted average prices on the more important grades of refinery gasolines taken from sales made on Monday, May 14, and reported by refiners are shown below with the corresponding price for Monday of the previous week.

Grade Gasoline—	Price May 14	Price May 7
58-60 437 endpoint	.07300	.07106
60-62 437 endpoint	.07290	.07200
60-62 400 endpoint	.07500	.07271
64-66 375 endpoint	.08000	.07437

Naphtha sales continued to increase slightly as attention was turned to the low-priced materials for use in blending with natural gasoline.

Natural Gasolines

All grades of natural gasoline were stronger and there was a fair movement of all grades but a large part of the buying was done by manufacturers themselves. These manufacturers were willing to take only doctor-treated material and as a result there was a wide differential in price between the sweet and sour products meeting the same specifications in all other respects. The AA grade sour natural gasoline was offered freely from one-half to three-eighths cent below the price being paid for the doctor sweet grade AA. Manufacturers anticipate a continued advance in prices over the balance of the month, but more general buying will have to develop in the meantime to give the market support.

Kerosene and Distillates

There was a much improved movement of kerosene over the past week and prices were advanced one-eighth cent. Some refiners have posted 5½ cents as their minimum price and have more orders than they need to move their production from day to day at present. Over the bablance of the month they feel confident prices will continue to strengthen in view of this demand. Very little distillate is moving and there has been very little evidence of a price change.

Fuel Oil and Gas Oil

The heavier gravity fuel oil seems to be pegged at 70 cents as the minimum and some refiners chose to store or burn their production instead of cutting the price in order to move it on the present slow market. The West Texas fuel continues to be offered in the mid-western marketing territory in increasing amounts. The low cold-test material was a little harder to find than during the previous week, but the demand was less insistent in view of the weak fuel market in general.

Lubricants and Wax

Except for the weakness in the cylinder stock and bright stock markets, the general lub market is in a better shape than during any time in the last six months. This improvement is not in the form of a higher schedule of posted prices, but in the elimination of price concessions on large orders. Wax prices remained unchanged and more buying resistance was developed as refiners answered inquiries by setting higher quotations on future deliveries.

STORAGE STATION

LOS ANGELES, Calif., May 12.—The Richfield Oil Co. of California has announced it will erect one of the largest marine gasoline storage bases on the Pacific Coast. Its capacity will be 200,000 bbls. and the construction of the first of five units will be begun at once. The base will have both rail and water transportation facilities.

Others are making more hole—so can you

Am trying your "K-P" Bit and like it fine. The "K-P" makes plenty of hole where the fish tail won't go.

I made 72 feet in 6 hours in lime shell and I don't believe there is another bit that will make it.

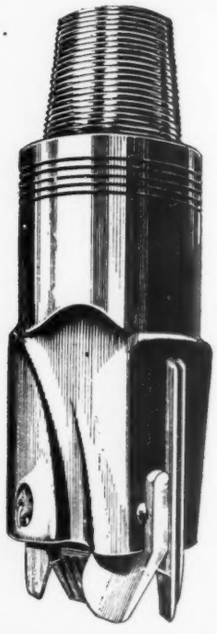
F. W. Caughfield*

*Driller for Coyle-Concord Oil Co., Big Spring, Texas.

K-P

THE LINE OF LEAST RESISTANCE

STRAIGHT-HOLE Rotary Drilling Bits



Kennedye-Plumb Corp.
Railway Exchange Building
ST. LOUIS, MO.

Sold by every
"Continental" — "National" — "Oil Well" supply company branch store.

LITTLE RIVER AGREEMENT EXTENDED FOR A PERIOD OF THIRTY DAYS

The operators of the Little River Pool, by unanimous agreement last week, decided to extend the date upon which drilling may be started for a period of 30 days. Under the extension of the agreement, June 15 will be the date upon which wells on the secondary locations allowed by the Seminole advisory committee may be started. Under the terms of the agreement, the entire area will be thrown wide open to the drill when the first well of the secondary batch of locations reaches the sand. Under normal conditions of drilling time in this field, the agreement now virtually means that the Little River Field will not be thrown open to miscellaneous drilling until August 15, and that it will be October 15 before any appreciable number of the wells will be producing.

The Little River meeting of last week also heard a plan formed by R. B. Pringle, vice president of the Independent Oil & Gas Co. and a member of the Seminole advisory committee. The Pringle plan while not voted upon was thought to have the approval of the majority of interested concerns in this area. It calls for limiting the output of the Greater Seminole area to a daily figure of 300,000 bbls. which is approximately the normal outlet of the pipe lines. The Pringle plan was referred to the advisory conservation committee of the Oklahoma-Kansas division of the Mid-Continent Oil and Gas Association. Mr. Pringle had been foremost in the active conservation of the Seminole situation, and it was his plan which was used in starting the 10 test wells south of the Little River Pool. The Pringle plan follows:

The Pringle Plan

"That whereas, there are pipe line facilities and markets to handle approximately 300,000 bbls. per day of crude oil from the Greater Seminole Field, which field comprises the following pools: Namely, Seminole City, Earlsboro, Searight, Bowlegs and Little River.

"And whereas, it is apparent that unless some measures are taken to restrict production in the Little River Pool, an amount of oil in excess of the pipe line and marketing facilities above mentioned will be developed and brought to the surface, thereby causing large quantities of oil to be stored at great expense to the operators in this field, and that in view of all recent drilling developments in the 7-6 area, it has been proven that the north and south pools are one and the same, and that for this reason any restriction of production to be equitable and fair to all operators in this area should apply to the Little River area as a whole.

"Therefore, be it resolved that for the period from May 15, 1928, to November 15, 1928, the Little River Pool shall be permitted to produce an amount of oil equal to the difference between 300,000 bbls. of oil and the amount of oil produced by the following pools: Namely, Seminole City, Earlsboro, Bowlegs and Searight.

"That for the purpose of allocating production, the field shall be divided into ——— tracts of 40 acres each and each such 40-acre tract which is in production, shall be considered as a unit for the purpose of proration hereunder. The daily amount of oil to be produced from each 40-acre unit shall be determined as follows:

"Each unit shall be entitled to produce a quantity daily equal to the quotient obtained from dividing the number of units into the daily maximum amount of oil permitted to be produced in the field, without reference to the number of wells located on such unit. No oil in excess of such amount shall be produced from any 40-acre unit. In the case of companies owning 20-acre tracts, they shall be considered as owning one-half of a unit.

That each operator or company party to this agreement shall be permitted to operate their properties in any manner they may deem advisable and in their best interests, and no restrictions are to be placed on drilling of wells or the use of air lift to produce oil.

Each operator or company party to this agreement shall furnish the umpire with a written statement of its oil runs semimonthly, and the umpire and advisory committee are hereby authorized to secure verification in case of any questions to the accuracy of such reports, from the books and records of companies owning producing operating units in this field, and the advisory committee and umpire and hereby authorized to secure from the pipe line and crude oil purchasing companies, statements of runs from various units in the Little River Field.

Maximum Production

That all wells now completed in the South Little River Pool or that may be completed prior to July 15, are to be restricted to a maximum of 100 bbls. per day.

That each unit shall be considered entirely separate and failure to produce amount of oil allocated to each unit from such unit, shall entitle operator or company to produce any additional amount of oil from another lease or unit in this area.

That the umpire and advisory committee are authorized from time to time to add additional units to or subtract units from, what is now termed the proven area of the Little River Pool, and that these contingencies will be acted upon by the umpire and advisory committee as the development of the field progresses.

That for the purpose of determining allowable production in the Little River Pool, the Seminole City, Earlsboro, Searight and Bowlegs Pools are to be considered as defined by present development, and should new productive areas be developed near any of these pools, such production shall not be considered in arriving at production figures used to determine amount of oil to be allocated to the Little River area.

That in the event any reliable pipe line or crude oil purchasing company having facilities in this area are desirous of taking additional amounts of oil, they will set out in a letter addressed to the umpire, the additional amount of oil they are willing to purchase, and the advisory committee is authorized to raise the unit figures to a point sufficient to supply such demand, even though in doing so the production for the entire Seminole area might be raised to a figure in excess of 300,000 bbls. per day. It being the intent of this agreement that such an amount of oil will be produced as can be moved and sold at the current posted price.

That the advisory committee of five or seven members is to be selected by the operators parties to this agreement, and Ray Collins is to act as umpire, and this committee and the umpire shall have authority to arbitrate all disputes and its decisions shall be final.

This agreement may be terminated prior to November 15, by an agreement of a majority of the parties.

E. J. Nicklos, division manager of The Texas Company in charge of Kansas, Oklahoma and Kentucky, was elected a member of the Seminole advisory committee replacing Howard N. Cole, deceased.

COMPILATION OF LAWS AFFECTING PETROLEUM

WASHINGTON, D. C., May 12.—The Department of Commerce is working on a compilation of laws of foreign countries affecting the oil industry of the world. For several years news of changes in the laws of many oil countries has been received and made available to the American industry so that at present there is really enoug' information on that subject to produce material for a fair-sized volume. The effort of the department, however, which is being made through its division of commercial laws, is to present these oil laws classified to permit quick reference on the part of the oil exporter or ambitious company desiring to extend its trade throughout the world so that the legal problems likely to be encountered may be seen at a glance.

The trend of so many of the countries producing oil toward nationalization of their industries and the discouragement of foreign competition by hampering taxes or legal restrictions will be shown as a guide to anyone intending to extend markets abroad.

"Bert" Mallory Dies Of Uraemic Poisoning After Short Illness

BRADFORD, Pa., May 13. — Lewis Elbert Mallory, one of the largest individual oil producers in the Eastern Field and a large owner of stock in natural gas companies, died here today of uraemic poisoning after a few days illness.

Lewis Elbert Mallory

"Bert" Mallory was well known and highly esteemed by thousands of oil and gas men throughout the United States. He came from a family prominent in the industry on both sides of the house. His father, Lewis E. Mallory, Sr., was one of a noted family of brothers all of whom were in the oil business as producers, and his mother was a sister of George W. Crawford, president of the Ohio Fuel Corp., Pittsburgh, Pa., Frederick W., president of the Ohio Fuel Gas Co., Columbus, Ohio; and J. Bert Crawford, United Natural Gas Co., Oil City, Pa.

The Mallorys, father and son, were among the men who organized the Ohio Fuel Supply Co. and Ohio Fuel Oil Co., which were later merged with the Columbia Gas & Electric Co., and L. E. Mallory, Jr., was one of the founders of the Bradford Oil Refining Co. He had extensive interests in the Bradford Field.

Deceased is survived by his wife and three children, Thomas, Miss Marjory and Lewis E. Mallory, III, and one sister, Mrs. F. C. Crittenden of this city.

The funeral will be held Wednesday and the burial will be in the family mausoleum in Oak Hill Cemetery.

POTTER ELECTED CHAIRMAN

C. P. Potter, engineer in charge of large motor and transformer divisions of the Wagner Electric Corp., St. Louis, Mo., was elected chairman of the St. Louis section of the A.I.E.E., in recognition of his many years of activity in the organization. Ever since he graduated from the University of Illinois in 1909, he has been serving on various A.I.E.E. committees, and last year served as vice chairman of the St. Louis section.

A FEW OIL COMPANIES
USING ELECTRIC POWER
Humble Pipe Line Co., Albany
Denny-Andrews Power, Putnam
Acme Pipe Line Co., Albany
Marland Pipe Line Station, Albany
Texas Power Co., Blake Pool
Humble Pipe Line Station, Pioneer
Phillips Recovery, Sedwick
Phillips Petroleum Co., Trent
Marland Oil Co., Trent
Mid-West Exploration, Trent
Illinois Pipe Line Co., Yates Pool
T. & P. Coal & Oil Co., McCamey
Magnolia Pipe Line Co., Throckmorton
Humble Pipe Line Co., McCamey
San Angelo Refining Co.
Amerada Corp. Power, Burkett
Acme Tool Co., Cross Plains
Western Carbon Black Co., Pioneer
Taylor Link Co., San Angelo
Mid-Kansas & Trans-Continental, Yates Pool
Gulf Production Co., Yates Pool
Dutch Shell Pipeline Co., McCamey
POWER
and light
for WEST TEXAS
Blanketing the greater portion of those rich, West Texas Oil Fields; it is no wonder that far-seeing Production Managers are turning to ELECTRIC POWER
—for drilling wells
—for pumping wells
—for heating flow tanks
—for pumping pipe lines
—for operating loading racks and gasoline recovery plants.
ELECTRIC POWER has proven itself CHEAPER than all other fuels; because it eliminates water problems and provides steady, constant power at the throw of a switch that is not affected by corrosive fuels.
Let OUR Engineers
Solve YOUR Problem
WEST TEXAS UTILITIES COMPANY
ABILENE, TEXAS

Of Interest to Sales Departments

Retail Marketing On Saner Basis in East Coast States

NEW YORK, May 12.—One of the favorable factors in the present petroleum situation lies in the better average net returns which the refiners are getting on their gasoline sales this year. Competitive conditions, while still unfortunately sharp and still frequently taking the line of price cutting, have nevertheless shown improvement over those prevalent last year at this time.

During the closing half of 1926 and the first half of 1927 the fight for gallonage in East Coast territory became so bitter that refiners and marketers were offering filling station operators almost any concession to get their pumps in. While the wholesale market, based on tank wagon deliveries, was ostensibly 17 cents a gallon, deliveries to filling station distributors were being made from 12 to 15 cents a gallon. Marketers were utilizing every known type of inducement to line up filling station accounts.

Many were paying filling station operators rent for the pumps which they installed for the station owner's use, and in addition were paying the station owners for "advertising." In other words, the station owners were not only spared the expense of installing their own pumps but actually had the marketers paying them for using their pumps, and in addition received "advertising" revenue from the marketers for putting up signs designed to boost their own business. Thus it was truly said that the oil companies were "fighting for losses" and undergoing a market era of "profitless prosperity."

Not Renewing Contracts

"This year many of the contracts made during the heat of this gallonage war have expired and have not been renewed. The companies naturally are not stressing this development, inasmuch as the conditions which actually prevailed were never common knowledge, and so the companies continue to adhere to a policy which literally provides that "the least said the better" on this subject. The fact that many of these uneconomic practices are being abolished, however, indicates that the improvement which has come to the market is of substantial character.

Enlarging Facilities

Another constructive development in gasoline marketing in the East Coast territory is the tendency on the part of large refiners to add to their own chains of gasoline distributing stations. This tendency has become more marked since the first of the year and the gallonage handled by the company-owned stations during 1928 will show a heavy increase over that of last year. A number of the marketers have found out by costly experience that the only method of establishing permanent distribution is to handle retail sales themselves, and it is expected that this plan will be further developed during the year. Sales through company-owned stations not only yield a much higher net return on gasoline distribution but show real profits on lubricating oil. This latter oil is perhaps the most profitable product sold at the filling stations.

Standard Oil Co. of New York has a marketing plan in some sections of its territory which involves ownership of filling stations by the company, with management on a profit-sharing basis. Under this plan the operator of the station gets all of his supplies from Standard Oil of New York and is allowed a fixed margin on gasoline and lubricating oil sales, as well as on the various specialties marketed by the company. The operator of the station pays for the lighting, with the company taking care of the remainder of the maintenance. The revenue from repair of "flats" and other service work of this character goes to the station operator. The arrangement is a satisfactory one from the standpoint of both parties.

Short Talks on Refinery Products

By W. T. Ziegenhain

HOW TRANSFORMER OIL IS MADE

In the May 10 issue of The Oil and Gas Journal the refinery processing of transformer oil was discussed. The various steps were traced from the time it was distilled from the crude, treated and filtered until it was ready for loading into tank cars, drums or cans. The latter operation must be done as carefully as any other step in the processing of the oil and in some respects it is even more important for after it is loaded there is no chance to correct a mistake.

The absolute exclusion of water and dirt is the chief object in the filling of the containers and involves a close inspection of the containers as well as a close inspection of the oil. The instrument used to detect water or dirt suspended in the oil is called a dielectric machine and its name suggests the manner in which these are detected. Oil itself is a poor conductor of electricity and a very thin film of it will withstand the passage of an electric current. If water and dirt is suspended in the oil, it will allow the passage of an electric current more quickly and samples of the oil are taken at intervals during the filling of the containers and then samples are drawn from them after the filling is completed for testing. A sample that does not withstand 22,000 volts is usually unsatisfactory.

To exclude water and dirt all equipment is closed and in the case of filling drums and cans the rooms in which the filling is done are kept warm and in some cases the air is preconditioned or dried. After the containers are filled and sampled they are sealed. Equally good care must be taken by the customer after the oil is received. If the oil is allowed to be exposed to the air it will become contaminated with dust and during the expansion and contraction of the oil in an open drum, moist air or water may be drawn in and even the smallest trace will render the oil unfit for use without conditioning. When the oil is shipped in tank cars, they are usually of special design. They are usually heavily insulated in order to be less affected by atmospheric changes, thus minimizing "breathing" and the introduction of moist air. Steam coils are often placed in the bottom of the car to allow the oil to be heated during loading for as the warm air is expelled it carries moisture away with it.

Even when these precautions are taken it is sometimes necessary for the customer to process the oil before it is placed in the transformers and this is done either by filtering the oil through blotting paper or by running it through a centrifuge.

BOOKLETS DEAL WITH PETROLEUM PRODUCTS

CHICAGO, May 12.—The Shaffer Oil & Refining Co. has very recently issued two pamphlets intended to give the general public a better knowledge regarding oil products in general use. The more important is devoted to economical industrial lubrication and is a statement of facts regarding lubricating oils and greases that should be valuable to all users.

The other publication is a smaller booklet on gasoline. It tells motorists what makes a desirable, dependable motor fuel. While primarily designed to make known the Shaffer products, these booklets contain much valuable information. Each bears the "Byllesby Shield" identifying the Shaffer Oil & Refining Co. as a member of the group of Byllesby organizations.

PUBLIC UTILITY USE OF FUEL OILS INCREASING

The consumption of fuel oil by electric public utility power plants has shown an increase during the first three months of this year. During March 601,000 bbls. were consumed while in January 589,500 bbls. were consumed. This change is interesting, for there has been a constant general decrease in the amount of fuel oil consumed in these plants for a period of many months in the past despite the relatively low price of oil.

The period of increase is too short, however, to be taken as an indication of the general trend for the coming months and with natural gas being extended into new industrial territories now being served with oil there is less likelihood of any material increase in the use of fuel oil from electric power companies. Water power and gas is tending to replace oil and coal in this industry but should fuel oil prices remain at their present low level it is apparent the use of oil will become more attractive.

NEW DISTRIBUTING COMPANY

CHATHAM, Ontario, May 12.—Announcement has been made of the incorporation under Ontario charter of Thayers, Ltd., as distributors of petroleum products. The company has taken over the J. L. Thayer & Son, Ltd., business of London, Ontario, as well as gasoline and oil services at Chatham, Ingersoll and Oakville, and will engage in wholesale and retail distribution of gasoline and petroleum products with a chain of storage and service stations throughout western Ontario, particularly along Nos. 2 and 3 provincial highways. The management will be in the hands of J. L. and Leonard Thayer of London, Ont.

SMALLEST STATION

Cities Service Oil Co. has just closed a contract for what is believed to be the world's smallest filling station at Lorain, Ohio. The new station is in the Metropole restaurant in Lorain and serves as a source of fuel supply for the modern cigar lighters which are so much in favor these days. The "station" furnishes its patrons with green Koolmotor gasoline, and is supplied from the bulk plant of the Lorain-Elyria station.

The contract for this unique station, which is in the heart of Lorain, was secured through the efforts of Ed Hannum, local manager, and L. W. Wolford. The initial contract calls for a gallon a month.

STEADY INCREASE IN BUS TRANSPORTATION

CHICACO, May 12.—Seeking to learn the result of competition from motor buses on electric railroads, the Interstate Commerce Commission addressed a questionnaire to those roads controlled by the commission, that is such electric roads as are engaged in interstate traffic. The commission received replies from 118 organizations. These roads operate in terminal service 401 buses and in line service 351 buses. Those in the line service have a line mileage of 2,972 miles. Through subsidiary organizations they operate 190 buses in terminal service and 422 buses in line service having a total line route mileage of 2,857 miles.

The companies reported that 78 buses were operated by others than themselves or their subsidiaries in terminal service and 315 in line service with a total bus route mileage of 1,816 miles. Regarding buses operated in competition with their electric lines the companies reported 1,215 vehicles operated by others with a total mileage of 10,280 miles.

The I.C.C. has control over 260 electric railroads so that the report from the roads was not complete. The roads reported that the line bus service were in many cases to open up new territory or to compete with established competing lines. The report states that the number of buses operated by the electric lines far exceeds those operated by the steam lines.

This report, incomplete though it be, indicates the great number of buses which are being used at the present time. And this number is growing steadily both through the addition of more vehicles by established lines of motor buses and by the starting of new lines. There are numerous railroads in the electric class that do not come under the control of the I.C.C. as they operate entirely in one state. Each motor bus is a large consumer of gasoline. The average consumption of gasoline per bus is 1 gallon to every 5 miles traveled.

ADDS STATIONS

AMARILLO, Tex., May 12.—The Phillips Petroleum Co. during the past week opened its fourth bulk station in the Panhandle area. A fifth station is to be built at Shamrock, Tex., immediately. The company has a program which calls for the construction of additional stations in this section. The company has enlarged its refinery at Borger, Tex., so that it has a capacity of 8,000 barrels daily.

Gasoline, kerosene and distillates will be distributed at the stations. As the need arises filling stations will be built and operated in conjunction with the bulk stations. Particular attention is being paid to the distribution of distillates as tractor fuels, for which there is a large demand from farms and large ranches.

SHUT DOWN PLANT

The Riley Petroleum Co. of Tulsa, effective May 1, shut down a skimming plant which it has operated under lease for the past three years. The shut down is for an indefinite period. The plant is owned by the Wilcox Oil & Gas Co. of Tulsa.

TO BUILD REFINERY

The Snowcap Oil Co. is planning on building a refinery at Collins, north of Great Falls, Mont., to handle production from the new Bannatyne Field. The plant is to have a capacity of 500 bbls. daily and this will be increased as the field production increases.

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Determining Sulphur in Heavier Oils

Oxygen-Bomb Test Shows Smaller Content Than Carius Method With Oils Containing 2.5 to .15 Per Cent Sulphur

By John M. Devine and F. W. Lane
Bureau of Mines

The oxygen bomb is used extensively for determining sulphur in petroleum, although it has been suspected that the results obtained with this method are somewhat lower than the true values. In this paper are compared the results given by the oxygen bomb and Carius methods, the latter being generally accepted as the standard procedure for the determination of sulphur in organic compounds. The Carius determinations given here were made in connection with a special study of this method.[1] Only petroleum oils of the less volatile type are covered in the present work.

When used with oils containing 2.5 to 0.15 per cent of sulphur the oxygen-bomb method gives results that are consistently slightly lower than those obtained with the Carius method. This variation, for the oils used, amounts to 3.1 per cent (on the basis of sulphur present) for the sample containing 2.47 per cent of sulphur, and gradually increases (as the percentage of sulphur in the oils decreases) to 7.3 per cent for the oil containing 0.15 per cent of sulphur. With the oils studied the presence of ammonium nitrate in the bomb does not influence the results materially.

Nevertheless, for routine work and often for research, the oxygen-bomb method of determining sulphur is entirely adequate. The use of the much more tedious Carius method is necessary only when results of the highest accuracy are essential.

Experimental Work

Determinations on solution of elementary sulphur: Sufficient sulphur (flowers) was dissolved in white medicinal oil to give a solution containing approximately 0.5 per cent of this element.[2] The prepared sulphur oil was analyzed for sulphur by the oxygen bomb and Carius methods. The usual procedure[3] was employed with the bomb, but the Carius method as ordinarily carried out[3] was modified to some extent.[4]

Results

The results were:

Bomb method Per cent S	Carius method Per cent S
0.473	0.477
.470	.481
.468	.481
.476	.482
.478	.482
Average .473	Average .481

Accepting 0.481 as the true figure, the average of the results with the bomb is 1.7 per cent low. This deviation, however, is less marked than the differences between certain individual bomb determinations. According to the American Society for Testing Materials[5] duplicate determinations by this method should agree to 42 per cent on the basis of the sulphur found.

Determinations on Petroleum Oils: The following table gives the results obtained with the oxygen-bomb method for five oils containing sulphur. The sulphur in Oil 1 was very carefully determined by the Carius method.[6] Oils 2 to 5 inclusive, were prepared by diluting Oil 1 quantitatively with white medicinal oil.[7]

TABLE 1—Results of Analysis for Sulphur by the Carius and Oxygen-Bomb Method

	Per Cent of Sulphur in—				
	Oil 1	Oil 2	Oil 3	Oil 4	Oil 5
Carius method	2.55	1.12	0.624	0.299	0.150
Bomb method	2.44	1.07	0.596	0.279	0.140
Bomb method	2.48	1.09	.594	.280	.139
Bomb method	2.52	1.08	.600	.286	.139
Bomb method	2.49	1.08	.602	.281	.139
Bomb method	2.49	1.08	.599	.283	.139
Bomb method	2.47	...	...	.280	.137
Average ..	2.47	1.08	.598	.282	.139
Variation of bomb from Carius ...	—3.1	—3.6	—4.2	—5.7	—7.3

Oxygen Bomb Test

It has been suggested that the low results with the oxygen bomb are due to incomplete oxidation of sulphur dioxide during combustion,[8] and that the conversion to sulphur trioxide may be made complete by adding enough ammonium nitrate to the oil to give a nitrogen content of 5 per cent of the sulphur present. Accordingly, a bomb analysis for sulphur was made with Oil 3 (0.624 per cent of sulphur), and the suggested amount of ammonium nitrate was added. The results were: 0.589, 0.605, and 0.597 per cent of sulphur; average, 0.597 per cent. Reference to Table 1 (Oil 3) shows that this average result is 4.3 per cent low when compared with the result obtained with the Carius method. It is almost identical with the figure obtained when the bomb method was used in the ordinary way.

Oil 1 (Table 1) was also subjected to bomb analysis and the calculated amount of ammonium nitrate added. The results were: 2.46, 2.47, 2.51, and 2.47 per cent of sulphur; average, 2.48 per cent. This result is in good agreement with that obtained when the sulphur was determined with the bomb in the ordinary manner.

The presence of ammonium nitrate in the foregoing analyses seemed to affect the results but slightly. However, as Oil 1 contained approximately 0.7 per cent of nitrogen it was thought that the effect of using ammonium nitrate might be apparent in an oil containing no nitrogen. Accordingly, pure benzyl disulphide was dissolved in medicinal oil to produce a solution containing approximately 0.52 per cent of sulphur and almost entirely free of nitrogen. This oil was first analyzed for sulphur with the oxygen bomb in the usual way. The results were: 0.506, and 0.504 per cent of sulphur; average, 0.505 per cent. The same oil was then run in the bomb, employing the usual procedure, except that the bomb was flushed out several times with oxygen to eliminate the nitrogen from the air in the bomb. The results were: 0.509 and 0.509 per cent of sulphur; average, 0.505 per cent. Finally the sulphur was determined, using ammonium nitrate, as suggested by Bradley, Corbin and Floyd; in other respects the procedure was the common one. The results were: 0.512 and 0.512 per cent of sulphur; average, 0.512 per cent.

Recalling that duplicate determinations by the bomb method cannot be relied upon to agree better than plus 2 per cent on the basis of sulphur found, it appears that the addition of ammonium nitrate to the charge of oil or even the entire absence of nitrogen in any form did not appreciably affect results with the oils under investigation.

[1] Devine, J. M., and Lane, F. W., The use of the Carius method for the determination of sulphur in the less volatile petroleum oils. In process of publication by the Journal of the American Chemical Society.

[2] American Society for Testing Materials, Standards, 1927; Part 2, page 419, Method D 129-27. See also United States Government master specification for lubricants and liquid fuels and methods for sampling and testing, Tech. Paper 323B, Bureau of Mines, 1927, page 94.

[3] Gatterman, Practical Methods of Organic Chemistry (Trans. by Schober and Babasinian); 3d Am. Ed., 1924, page 86.

[4] See footnote 1.

[5] See footnote 2.

[6] See footnote 1.

[7] As near as could be determined, the sulphur content of the medicinal oil was 0.006 to 0.007 per cent. This has been neglected in calculating the sulphur in oils 2 to 5, inclusive.

[8] Bradley, M. J., Corbin, R. M., and Floyd, T.W., Ind. and Eng. Chem., vol. 18, 1926, page 583.

VAPOR PHASE CRACKING YIELDS PRODUCTS RICH IN BUTADIENE

By Stanley Francis Birch[1]
The Anglo-Persian Oil Co., Ltd.

Of the numerous methods available for the preparation of butadiene in the laboratory, those described by Thiele[2] and by Ostromuislenskii[3] are probably the most convenient. Both, however, suffer from the disadvantages which usually characterize operations at comparatively high temperatures; the exact conditions are difficult to find, the process is long and tedious, and finally involves the separation of the required material from a complex mixture.

It has long been known that butadiene occurs in the various products obtained when oils are heated to a high temperature. Caventou[4] first isolated butadiene in the form of its tetrabromide from illuminating gas, and Armstrong and Miller[5] definitely established the presence of butadiene in the liquid obtained by compressing oil gas. The work of numerous later investigators has confirmed their results and has shown that the more drastic the heat treatment to which the oil is submitted the greater is the tendency for butadiene to be formed. For this reason vapor-phase cracking of petroleum, which is carried out at a much higher temperature than liquid-phase cracking, yields products specially rich in butadiene.

Indeed, a patent[6] for the preparation of butadiene and isoprene by the pyrolysis of petroleum oils at about 700 degrees Centigrade, particularly under reduced pressure, has actually been taken out. It was therefore surprising to note the opinion expressed by Brooks[7] that the isolation of butadiene from the low fractions of the liquid obtained by compressing oil gas or Pintsch gas was particularly due to the skill of the chemists, since this material might well be expected to be comparatively rich in the more volatile diolefins. In fact, a reinvestigation of this material has shown it to be a convenient and inexpensive source of butadiene, which can be readily isolated from it in the form of its tetrabromides. Owing to the cheapness of the material and the simplicity of the method of separation, it is an easy matter to prepare as large a quantity of the tetrabromides as may be desired.

Butadiene Tetrabromide

"Railway hydrocarbon," the liquid produced during the preparation of oil gas, was distilled from a copper can in 2-gallon (9.1-liter) batches, through a 6-foot (1.8-meter) column, packed with metal rings and attached to a Liebig's condenser. The uncondensed vapors from the receiver were led into bromine (250 c.c.) which was initially mixed with ice. The evolution of gas commenced long before any condensable distillate came over and was practically complete when the stillhead temperature reached 60-70 degrees Centigrade. Decoloration of the bromine took place rapidly. Considerable heat was evolved; judicious cooling was employed, but towards the end of the experiment the reaction mixture was allowed to become sufficiently warm to prevent the solidification of the butadiene tetrabromide. To avoid loss of butadiene the bromine taken represented a slight excess. When evolution of gas had ceased, the excess of bromine was destroyed by sulfur dioxide and the bromides were washed twice with hot water. After separation of the water, the product was cooled in ice, when the whole set to a semisolid mass. As much of the liquid as possible was then separated at the pump, the residual solid was washed with a small quantity of petroleum ether (60-80 degrees Centigrade) and finally crystallized from the same solvent. The solid butadiene tetrabromide separated in small, glistening, colorless plates melting, after a second recrystallization, at 117 degrees Centigrade. The yield from 2 gallons (9.1 liters) of starting material was 200 to 210 grams; a further small crop separated from the liquid bromides and petroleum ether mother liquors on standing.

The liquid bromides were freed from solid tetrabromide as completely as possible and fractionated under reduced pressure. The fraction boiling above 150 degrees Centigrade at 42 millimeters deposited on cooling a further crop of the solid tetrabromide (about 12 grams); this was removed and the residue refractionated. The fraction boiling at 169 degrees Centigrade and 30 millimeters appeared to be mainly liquid tetrabromide but still contained some of the solid isomer, which again separated on cooling. The yield was about 80 grams. When treated with zinc dust and alcohol in the manner described by Thiele[2] it gave a colorless gas which, on passing into bromine, yielded a further quantity of the solid tetrabromide.

Further quantities of both liquid and solid tetrabromides were obtained by distilling the low-boiling hydrocarbons which collected in the receiver when the original starting material was distilled. Eight gallons (36 liters) of the railway hydrocarbon gave a little more than a liter of these hydrocarbons, from which about 200 grams of the crude solid tetrabromide and 145 grams of the liquid tetrabromides were obtained.

Besides butadiene tetrabromide, about 500 grams of bromides boiling from 65 to 150 degrees Centigrade and 42 millimeters were obtained. These probably consisted mainly of isobutylene dibromide and were not further treated.

Using the method described, it is possible to distill four 2-gallon (9.1 liter) batches in one day and thus produce about 800 grams of the solid tetrabromide. Redistillation of the condensate and fractionation of the combined liquid bromides takes another day and produces a further 250 grams of the solid tetrabromide and 560 grams of the liquid tetrabromide.

Preparation of Butadiene

Pure butadiene can be readily and conveniently prepared from the solid tetrabromide by the method described by Thiele.[2] For most purposes the once-crystallized material is pure enough. Butadiene prepared from the liquid tetra-

(Continued on Page 168)

[1] Reprinted from Industrial and Engineering Chemistry, official publication of American Chemical Society.

[2] Ann., 308, 337 (1899).

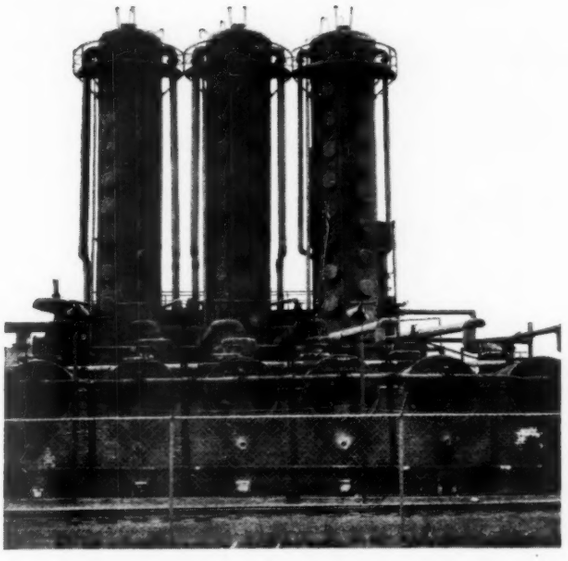
[3] J. Russ. Phys.-Chem. Soc., 47, 1494 (1915).

[4] Ber., 6, 70 (1873).

[5] J. Chem. Soc. (London), 49, 80 (1886).

[6] Engler and Staudinger, D.R.P. 265, 172 (1912).

[7] "Non-Benzenoid Hydrocarbons," p. 216.



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RADICAL CHANGES FORESHADOWED IN MARKETS IN THE FAR EAST

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The movement of Russian kerosene to India and the indicated expansion of the Standard Oil Co. of New Jersey's refinery operations in the Dutch East Indies through its subsidiary, the Netherlands Konoliale Petroleum Maatschappif, promise to effect radical changes in the direction and volume of Far Eastern petroleum trade.

Negotiations are also reported between the Russian Naphtha Syndicate and Japanese interests for the supplying of Russian fuel oil for the Japanese Navy. This would, of course, displace California fuel oil, the chief present source of supply.

According to recent reports from India, the Indian government has instructed the tariff board to investigate the Indian oil industry to determine whether protection is needed against this reported "dumping" of imported Russian kerosene. The Indian government thinks local production costs need not be examined. According to later reports, this protection plea of the Indian oil companies is obtaining scanty sympathy from the local Indian and European community, and it is believed that the Burma Oil Co. will prefer to forego any governmental assistance rather than incur the obligation to disclose working costs.

About 90 per cent of the capital invested in the Indian oil industry is British rather than Indian and the some 300,000,000 Indian consumers look on this cheap kerosene as a blessing.

Imports of Kerosene

The Standard Oil Co. of New York started importing kerosene from Russian Georgia in September, 1927, and during the five months from September through January these imports have totalled 13,634,000 Imperial gallons which have been invoiced at rupees 7,303,000, or an average invoiced price of 20 cents per gallon.

Imports of kerosene from the United States during the five months period have totaled 16,675,000 Imperial gallons, invoiced at rupees 10,406,000, which is the approximate equivalent of 22 cents per gallon.

Imports of kerosene from the United States during the corresponding five months of the preceding year were 25,700,000 gallons, or 15,000,000 gallons more than for the current period. This difference corresponds to the five months imports from Georgia, so that it is strikingly evident that Russian kerosene has displaced American kerosene to a decided degree.

The statistical position of Burma production and export is indicated in the following tables.

The production of crude oil in Burma during the year of 1927 in comparison with the five preceding years is as follows:

Burma Crude Oil Production

Year—	Imperial Gallons	Bbls. of 42 Imperial Gals. Each
1923	271,405,947	6,462,046
1924	270,213,003	6,433,643
1925	262,828,930	6,257,832
1926	250,049,471	5,953,344
1927	245,367,563	5,842,085

During the first six months of 1927 production declined nearly 5,000,000 gallons in comparison with the average production maintained in the year 1926. During the last six months of 1927, however, production improved and was maintained at the same rate as that which prevailed throughout 1926. The production obtained from the principal oil-producing areas in Burma during 1927 are noted in the following table:

Month (1927)—	Yenangyaung Field (Imp. Gals.)	Singu Field (Imp. Gals.)	Other Fields (Imp. Gals.)	Total (Imp. Gals.)
January	11,895,964	7,243,778	542,557	19,682,299
February	10,775,977	7,199,751	1,005,474	18,981,202
March	11,774,841	8,679,133	549,231	21,003,185
April	11,140,431	8,146,819	541,153	19,828,403
May	11,760,735	8,524,215	756,485	20,641,435
June	11,118,329	8,110,370	874,738	20,103,377
July	11,711,017	8,684,903	575,877	20,971,777
August	11,581,979	8,636,724	561,936	20,780,457
September	11,292,074	8,046,840	1,050,979	20,389,893
October	11,616,083	8,800,563	617,461	21,034,107
November	11,318,944	8,335,647	623,252	20,277,843
December	11,745,824	8,773,183	1,154,578	21,673,585
Total, 12 months	137,332,016	99,181,846	8,853,701	245,367,563
Barrels	3,269,810	2,361,473	210,802	5,842,085

Note—42 Imperial gallons per barrel.

Several of the wells now being drilled in the Yenangyaung Field and nearly all of the wells now being drilled in the Singu Field are from 2,500 to 4,500 feet in depth. The Singu Field is regarded as a reserve area which can be called upon to offset any decline in the Yenangyaung Field.

Burmese Consumption

The following figures show the total quantities of petroleum products exported from Burma and the total quantities of locally manufactured petroleum products consumed in Burma during the past five years which is an index of the total refinery output of Burma in this period. This list has been fully corrected and brought up to date.

Total Deliveries in Burma of All Indigenous Petroleum Products During the Past Five Years

Year	Kerosene Oil (Units)	Lubricating Oil (Bbls.)	Batching Oil (Bbls.)	Petrol (Imp. Gals.)	Grease (Bbls.)	Wax and Candles (Tons)
1923	1,308,020	9,536	....	1,728,000	166	2,400
1924	1,330,050	8,299	....	1,920,000	166	2,400
1925	1,434,440	9,102	....	2,240,000	174	3,000
1926	1,468,951	11,528	....	2,296,000	248	3,000
1927	1,594,185	14,135	1,200	3,880,000	300	3,200

Recapitulated Total

(Imperial Gallons)	(Bbls. of 42 Imp. Gals. Each)
13,037,312	310,412
13,353,598	317,943
14,944,571	355,823
15,381,428	366,224
18,185,217	432,981

Total Exports of All Petroleum Products From Burma During the Past Five Years

Year	Kerosene Oil (Units)	Lubricating Oil (Bbls.)	Batching Oil (Bbls.)	Petrol (Imp. Gals.)	Grease (Bbls.)	Wax and Candles (Tons)
1923	16,496,211	57,302	88,746	31,916,275	3,487	30,210
1924	16,123,846	70,943	100,445	38,045,198	5,173	35,268
1925	15,603,946	75,746	86,503	32,761,958	2,892	35,549
1926	16,745,455	70,219	40,227	31,260,302	2,483	42,179
1927	15,600,116	80,547	1,211	39,430,912	4,164	47,499

Recapitulated Total (Imp. Gals.)	(Bbls. of 42 Imp. Gals. Each)
178,625,183	4,252,981
184,325,179	4,388,695
174,483,168	4,154,361
181,776,744	4,318,018
181,113,573	4,312,228

1 unit kerosene oil = 8 imperial gallons.
1 bbl. lubricating oil = 42 imperial gallons.

Total Imports of Fuel (Imp. Gals.)	Oil (Bbls.)
8,770,768	208,814
10,915,605	259,845
11,945,029	283,357
12,394,629	295,110
17,376,986	413,737

9 lbs. grease = 1 imperial gallon.
8 lbs. wax and candles = 1 imperial gallon.

Burma Co. Dominant

The Burma Oil Co. is the dominating factor in Indian production and actually produces 75 to 80 per cent of all crude oil; however, it exercises control over 85 to 90 per cent of the total production of crude oil through its interest in subsidiary companies.

The following is a fairly accurate estimate of the interests producing crude oil:

Burma Oil Co. ..... 75 to 80 pct.
Indo-Burma Petroleum Co. ..... 8 to 10 pct.

PLANTS are equipped to produce quality equipment rapidly and accurately. And their advantageous location insures delivery on the job in the shortest possible time.

FIELD SERVICE comprises competent field crews maintained at strategic points to render prompt and efficient construction service.

EXPERIENCE in serving the oil industry, gained over a period of more than a quarter of a century, has proved that "United" actually can do the job more quickly, efficiently and economically.

Manufacturers of RIG IRONS and STEEL EQUIPMENT STEEL TANKS DRILLING MACHINES SWAB BARRELS

"UNITED"

REFINERY EQUIPMENT

IS PREFERRED BECAUSE "UNITED" OFFERS THE COMBINED ADVANTAGES OF WELL EQUIPPED PLANTS, EXCELLENT SHIPPING FACILITIES, ADEQUATE FIELD SERVICE, AND A THOROUGH BACK-GROUND OF SUCCESSFUL EXPERIENCE.

WIRE—WRITE—PHONE

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IRON WORKS, INC.

KANSAS CITY, MO.

Sales Office
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"UNITED" IRON WORKS INC. FOR SERVICE

Sales Office
TULSA, OKLA.
114 N. Rosedale

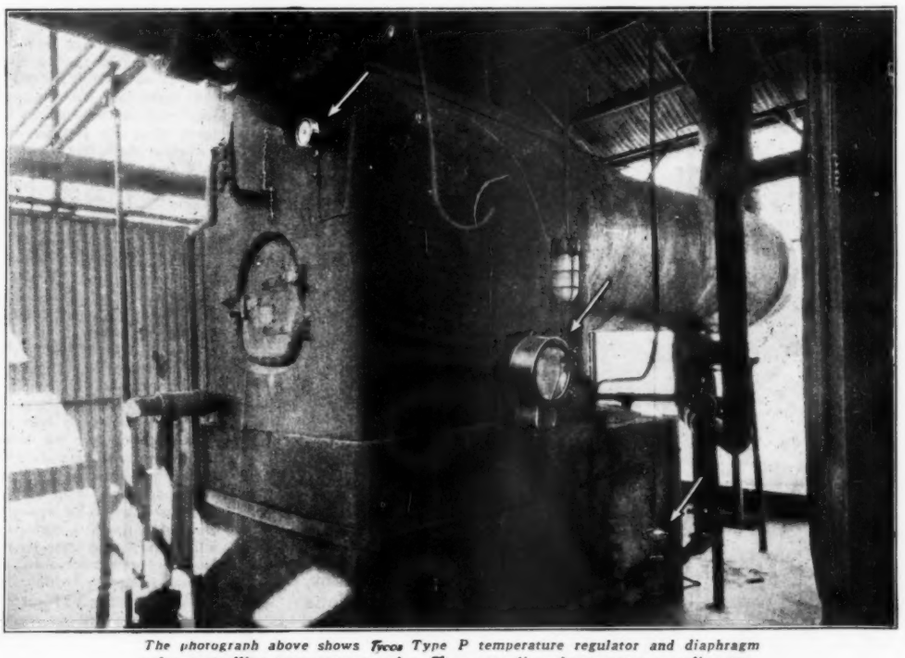
Tycos

Instruments for ALL Applications

THIS is but one use for *Tycos* temperature instruments in the oil business. There are hundreds of others for in few other industries are the uses of heat so diversified and so important.

Tycos temperature instruments have rendered excellent service for oil operators all over the world. They have been called upon to handle every temperature requirement. It is with confidence, therefore, that we recommend these sturdy, reliable instruments for your refinery.

Our engineers will gladly demonstrate why their uniform results and low upkeep make them worthy of being made the standard in *your plant*.



The photograph above shows Tycos Type P temperature regulator and diaphragm valve controlling temperatures and a Tycos recording thermometer recording temperatures in a gas fired still at a natural gasoline plant.

Send today for Tycos Catalog, part, 1700, showing instruments for use in the Oil Industry.

For complete information on new processes, methods and instruments send for "Handbook of the Petroleum Industry," just published ..... Price $5.00.

Taylor Instrument Companies

ROCHESTER, N. Y., U. S. A.

Canadian Plant
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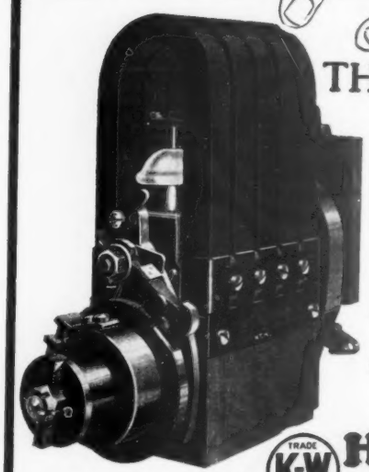
Manufacturing Distributors in Great Britain
Short & Mason, Ltd., London



THERE IT IS!

The Magneto that has predominated in the OIL FIELDS For TWENTY YEARS

A safe and dependable Source of Ignition

A GIANT FOR POWER

A BRUTE FOR ENDURANCE

SPECIFY TRADE K-W MARK High Tension MAGNETO

on your next engines. Models for every type.

MANUFACTURED BY THE TRADE K-W MARK IGNITION CORP. CLEVELAND, OHIO U.S.A.

OKLAHOMA-TEXAS REPRESENTATIVES MAGNETO IGNITION CORP. 308 E. SECOND STREET TULSA, OKLAHOMA

INSTANT HEAT!

Model "D" Super-Heater

STANDARD "Tar-Baby" HEATERS are daily proving they *DO heat faster*, thereby saving time and labor. Their choice on leading pipe line jobs is a fitting tribute to the *Quality* we build in them.

Users are finding *The Satisfaction* STANDARDS give reflects in *Lower Labor Costs.*

Investigate *STANDARDS*—our catalog 201 sent on request gives full facts.

Dept. 505

Tar Baby

Standard Steel Works

North Kansas City, Mo.

British Burma Petroleum Co.	...	5 to 6 pct.
Rangoon Oil Co.	.....	1 to 2 pct.
Miscellaneous companies	.....	1 to 2 pct.

Burma, which is the producing center, furnishes approximately 17,000,000 cases of 8 imperial gallons and refinery losses average from 10 to 20 per cent compared with to 3 to 5 per cent in the United States.

The background of the present controversy, or price war, between the Burma Oil Co. and the Standard Oil Co. finds its origin in the kerosene market. The Indian market calls for approximately 27,000,000 cases of kerosene per annum. For some time past Standard has supplied about 10,000,000 cases a year, while the Asiatic Petroleum Co., a subsidiary of the Shell group in London, formerly imported about 9,000,000 cases from Java while the Burma Oil Co. produced 17,000,000 cases, or 9,000,000 cases in excess of the demand. The Burma Oil Co. finally came to an agreement with the Asiatic company to supply to it the surplus at competitive prices for distribution through its organization. This arrangement was mutually satisfactory to the Asiatic company in that it relieved it from the necessity of importing from Java. The two groups, Burma and Shell, have always worked amicably together and the price of oil, including kerosene, in the Indian Empire has been fixed by agreement between the two groups.

The following figures disclose the amount of kerosene imported from the United States (principally Standard) and Russia (Asiatic Petroleum Co.) from 1923 to 1926, inclusive.

Year	United States Imp. Gals.	Russia and Georgia (Caucasus) Imp. Gals.
1923	45,760,947	4,101,730
1924	55,206,946	9,242,682
1925	45,889,437	4,310,642
1926	67,962,329	Nil

Break With Russia

It will be noted that the Asiatic Petroleum Co. ceased to import Russian kerosene in 1926. This action followed a strain in political relations between the Soviet government and England which finally terminated in cancellation of their treaty in the summer of 1927.

Immediately following the termination of the treaty the Standard Oil Co. began to import Russian kerosene and it has been estimated that during the past few months of 1927, 21,000,000 imperial gallons were imported from that source and marketed in India at a price considerably lower than the Burma Oil Co., which resulted in the latter organization operating at a loss during the past six months. At present the Standard Oil Co. pays the general import duty of $00.058 per imperial gallon, while the Burma Oil Co. pays an excise duty of $00.023.

During the past several months the Burma and Shell groups have combined to form the Burma-Shell Oil Storage & Distributing Co. of India, Ltd., and immediately dropped the selling price of kerosene in India. However, their production costs are so high that they do not afford competition with Standard and they are urging the government of India to either enforce a special duty on Russian kerosene, or, on the other hand, a higher import duty on all kerosene from outside sources

Considerable interest was shown when Standard recently announced its intention of importing gasoline. Whether it will be imported from Russia or elsewhere has not been mentioned, at any rate the Burma company feared the worst and immediately appealed for an import duty on Russian gasoline for protective purposes. The "protection" plea appears to be somewhat of a fallacy as only a few years ago the Burma Oil Co. announced in its annual report that the total production of gasoline was insufficient to supply the local demand. It naturally follows as a logical argument that if imports are necessary to supply demand why should a duty be levied which the taxpayer must eventually pay. Although representations have been submitted, the government of India has taken no action one way or another so far.

Extend New Jersey Refinery

The Standard Oil Co. of New Jersey is now reported to plan an extension of its refinery capacity in the Dutch East Indies from 3,600 bbls. a day to 10,000 bbls. At present the output of this refinery has been marketed by the Standard of New York in its markets in the Dutch East Indies, the Federated Malay States, Siam, French Indo-China and Hongkong. With the increased output of this refinery, the surplus, particularly of gasoline and fuel oil, is expected to be marketed in India.

While exact statistics of crude oil production in northern Sumatra are not available, it is known that considerable progress has been made by the Bataafsche Petroleum Maatschappif in the drilling operation in the East Coast of Sumatra and in Atjeh, and Pangkalan Soesoe and Serangdjaja, Sumatra East Coast, are producing. One well at Pangkalan Soesoe is producing about 115 tons a day and another at Serangdjaja produces 100 tons a day. A well at Perlak, Atjeh, produces 200 tons a day, and the smaller ones in the same vicinity produce about 10 tons a day, making a total production for northern Sumatra of about 425 tons a day.

The well at Pangkalan Soesoe is said to produce a straight naphtha which can be used as motor fuel directly without refining. The presence of water in the oil is retarding production and is causing the drillers to try for oil in the more inland sections.

The crude obtained in northern Sumatra is quite different from that obtained in other parts of Netherland India. It yields an unusually high percentage of light distillates, some 61 per cent gasoline, 25 per cent kerosene, 4 per cent heavy oils and 10 per cent residue.

VAPOR PHASE CRACKING PRODUCES BUTADIENE

(Continued from Page 164)

bromides is probably contaminated with traces of highboiling olefins.

It is interesting to note that, in spite of its high boiling point, the solid tetrabromide possesses an appreciable vapor pressure at the ordinary temperature. Hence loss by volatilization must be guarded against in attempting to dry the material in a steam oven, particularly as the vapor is lachrymatory.

Isolating Isoprene

An attempt to isolate isoprene from the low-boiling hydrocarbons in the form of b-methyl-B.d-dichlorobutane[5] led to the formation of a small quantity of liquid dichloride of indefinite boiling range, which was not further investigated.

[5]Ostromuislenskii, J. Russ. Phys-Chem. Soc., 47, 1933 (1915).

OKLAHOMA LEASE SALE

The commissioners of the Land Office of the State of Oklahoma, will receive sealed bids until 2 o'clock p. m., on May 29, for oil and gas leases as follows: Lincoln County—Lots 1-2 of NW, Section 36-17n-6e, 81.75 acres; Lots 3-4 of SW, Section 36-17n-6e, 83.31 acres. Until 2 p. m., June 5, Lincoln County—SW of NE and that portion of NW of NE belonging to the State of Oklahoma, Section 16-14n-4e; NW, Section 16-14n-4e; SE, Section 16-14n-4e; SW, Section 16-14n-4e. Until 2 p. m., June 12, Caddo County—NE, Section 36-10n-11w; Lincoln County—NE, Section 36-16n-4e; NW, Section 36-16n-4e; SW, Section 36-16n-4e; Pottawatomie County—NW, Section 16-11n-5e.

NEW DIESEL LINER

NEW YORK, May 12.—The new Grace liner Santa Maria has started on her first voyage. The new ship is a 15,000-ton motor passenger vessel, and will be operated in the South American trade. The vessel is equipped with Diesel engines and has a rated speed of 16½ knots. A sister ship, the Santa Barbara, also a Diesel powered vessel is now nearing completion, and will be placed into service in about two months.

Oil leaks licked—

NO need to tell the experienced oil and gas man about the yearning of every petroleum product for liberty when confined to piping.

That's why the common-sense course in making tight joints in gasoline pump installations is to use the tried-and-true product of a company that makes oil and gasoline pumps—a company that would countenance no leaky joints in its own product.

GILBERT AND BARKER MANUFACTURING COMPANY
PUMPS AND TANKS FOR THE OIL TRADE
SPRINGFIELD MASS. U.S.A.

G. & B. Pipe Sealing Compound is not soluble in gasoline or oil. Hundreds of oil companies use it for tight joints in filling station work, oil burner connections and similar applications. Made in quart, pint and ⅛ pint sizes.

When foresighted buyers specify *long life* as one qualification of oil field equipment, so often the order is filled with equipment made of Sheffield Copper Steel Sheets.

Specify Sheffield Copper Steel Sheets

SHEFFIELD STEEL CORPORATION
KANSAS CITY, MO.

New Billet Reinforcing Bars . . Rail Steel Reinforcing Bars . . Blue Annealed Sheets . . Merchant Steel Bars
Merchant Iron Bars . . Bolt and Nut Products . . Sucker Rods . . Pull Rods . . Track Spikes . . Forgings . . Rivets

THE OIL INSURANCE ASSOCIATION

PROVIDES FOR REAL FIRE INSURANCE FOR THE OIL INDUSTRY THROUGH ITS MEMBER COMPANIES

The Oil Insurance Association is in its tenth year of successful operation, with 100% performance record testifying to the dependability, thrift and speedy and complete satisfaction of its service

Among the purposes for which the Oil Insurance Association was organized are:

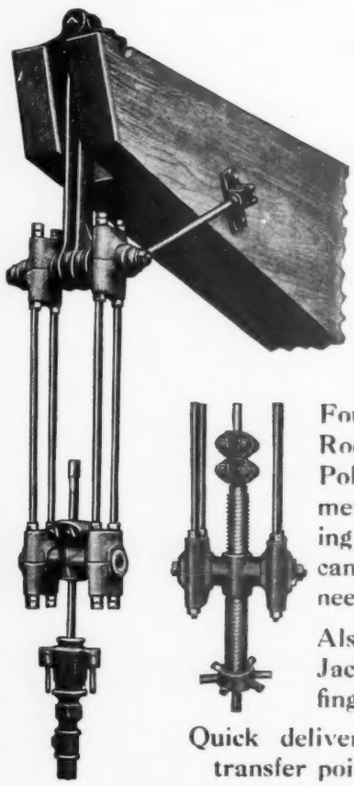
To enable oil operators to secure sufficient dependable insurance to adequately protect their interests.

To furnish property holders and those controlling oil business expert engineering and inspection service, so methods of insuring this class may be standardized, and efficient fire protective devices installed and properly maintained, thereby stabilizing the business to the point which will enable insurance companies generally to accept the class at fair cost and under equitable policy rates.

To make available the most business-like insurance arrangement for all oil companies.

Complete details of the Oil Insurance Association may be obtained from your insurance agent or broker.

OIL INSURANCE ASSOCIATION - H. M. Carmichael, Gen'l Mgr. - 175 W. Jackson Blvd., Chicago, Ill.



Emery—Lightning Beam Hanger All Steel

Unsurpassed for strength and long wear. Heavy enough for the deeper wells.

Four one-inch Suspension Rods. Plain steel yoke for Polish Rod regular equipment, but our Ball Bearing Temper Screw Yoke can be furnished where needed.

Also Lightning Powers—Jacks — Swings — Stuffing Boxes, etc.

Quick deliveries from convenient transfer points or from factory.

Kansas City Hay Press Co.
Kansas City, Mo.

The Hough Extension Lower Valve Does This:

Produces more oil at less expense and because of a slower stroke reduces power requirements. Makes for less cut oil and B. S. It has no leathers to cut out. Excellent for use on head wells. Fits any working barrel. Cuts down on pulling.

ASK YOUR DEALER—OR A USER.

THE CHARLES N. HOUGH MFG. CO.
Franklin, Penna.

W. TARKINGTON
Sales Representative
1724 Ruth Street,
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Sales Representative
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Products That Cut Down Your Underground Overhead

SECURING NEW INDUSTRIAL LOAD FOR NATURAL GAS DISTRIBUTORS

By John S. Zink
Oklahoma Natural Gas Corp.

Many chapters have been written on securing new load for the gas companies. In our case it was chiefly the getting back of industrial heating and power jobs that had fallen from gas due to the increasing cost of gas and the belief that the supply was not dependable. A large part of our prospects had tried gas and were convinced that since the gas company had forced them to invest in oil-burning equipment that it would be better for them to continue with some other fuel.

The oil salesman or some such person had the country believing that 6,800 cubic feet of gas were required to do the work of one barrel of oil. Our large consumers are mostly refiners and usually consider their cost of fuel oil the market price less freight and selling cost. We directly or indirectly were responsible for several comparative boiler tests between gas and oil. These tests gave results showing that from 5,200 to 6,000 cubic feet of gas were equivalent to one barrel of oil. Firing gas and oil under 300-horsepower boilers in two entirely separate and unbiased tests indicated that 5,200 to 5,300 cubic feet of gas were equivalent to one barrel of oil. The heat value of the gas was approximately 1,050 B.t.u. per cubic foot; the oil approximately 19,000 B.t.u. per pound.

Company's Investment

The prospective customer, convinced that he could burn gas as far as cost is concerned, doubted the dependability of our supply. This seemed to be most successfully met by pointing out that in most cases our investment to connect his plant was more than his for new equipment. We have continued to call on our larger consumers frequently, been able to offer suggestions, lend meters and change the pressure at which the gas was being delivered. This has brought about a better understanding between the company and the consumers. Even when fuel oil was quoted at 70 cents per barrel most of our refinery consumers burned gas throughout their plants at 15 cents per 1,000 cubic feet.

The smaller fuel users, laundries, bakeries, etc, came next. In case of this class user it was almost a case of "show me; I've been spoofed too much already about this gas." In most of these cases we found that the fault of poor gas service and misunderstanding was about equally divided between the consumer and the gas company. We were certain that considering the convenience of gas over oil our prospective gas consumer could burn gas at the rate then in effect. We immediately remedied the faults that were ours. Usually this required enlarging the supply line, the installation of new meters and in many cases, the extending of our intermediate pressure lines and the installation of a special regulator for that consumer. This always produced a favorable reaction on the new consumer and he usually followed our suggestions; bought on trial new burners and in general fixed up and repaired his boiler and boiler setting.

Office Buildings

The next group of fuel users to be reconverted to gas were the downtown office buildings, churches, etc. This group was perhaps the hardest job we had. While a few of the downtown buildings had remained on gas, the buildings that had changed to oil or had never used gas as fuel had a rather superior attitude to the gas-burning buildings. Here, for the first time, we met the argument that by burning oil they were helping the oil companies that filled their buildings. This line of reasoning had been given a great deal of publicity by the newspapers. We met this by explaining that most of the so-called oil companies were also producers of gas, and that by burning gas they were helping create a market for the oil companies' then worthless gas. We also pointed out that within the past year we had replaced a train load of fuel oil per day with gas. Formerly this oil was consumed, now it was shipped out to distant markets and brought money back to Tulsa and Oklahoma.

Several of the larger downtown building managers or owners met together and talked over things in general. At last this group decided on gas. The majority of these buildings are on a gas line laid especially for the larger buildings. We carry 6 pounds pressure on this line. Each building has a regulator that steps the gas down to 6 or 8 ounces and usually two meters, one for the boilers and one for the hot water heater, etc., that are used the year around. The smaller buildings, small laundries, apartments, etc, that were on oil or coal and a few are still burning some fuel, other than gas, also were very difficult to convert. The cost of fuel oil is so much per barrel. The small buildings bought oil at the same price as the large buildings, the cost of gas was more than oil, their fuel cost was a small matter and they could see no reason why they should spend money to increase their heating cost. We kept in touch with this class, continually reminding them of the easy and trouble-free gas heat. The first time the oil burner gave trouble we usually had a call—"How soon could we have the gas in?"

When it comes to the use of gas engines for power we have been losing ground rather than gaining. This cannot be attributed to lack of effort but to low electric power rates combined with the simple and care-free operation of the electric motor.

With the greatly improved direct connected gas engine driven generator we have hope of regaining at least part of this load in the near future.

Comparative Fuel Values

In connection with gas and gas service for new buildings and plants we write a letter to the owners and architects of all proposed buildings and plants offering to co-operate with them in matters connected with the use of gas in their new project. This letter is usually followed with a personal call after an appointment has been made by telephone. The gas service is now such that owners, architects and plumbers are not considering any fuel other than gas for most of the new buildings, even with oil and coal at their present price.

The only class of consumer to be affected by cheap coal or oil has been the larger users of fuel who buy their gas at our low rate of 15 cents per 1,000 cubic feet.

We do not have exact comparative figures on fuel used in towns supplied by our company. We have the amount of gas but not the amount of coal and oil. We estimate that even counting the coke, sludge acid and other refuse consumed at refineries 90 per cent of all fuel used in towns supplied by our company is gas.

I might add that fuel oil is quoted car load lots at 80 cents per barrel, and recently was down to 70 cents per barrel. We are selling 18-cent gas to one consumer who was firing slack or steam coal by hand, the cost of which was less than $2 per ton unloaded at his plant.

From experience, I would roughly set the following comparative fuel values:

Large, well-engineered boiler plants—
Six thousand feet of gas equals 1 bbl. of oil; 21,000 cubic feet of gas equal 1 ton of coal.

H. T. T boilers, stills, etc.—
Five thousand cubic feet of gas equals 1 bbl. of oil; 15,000 cubic feet of gas equals 1 ton of coal.

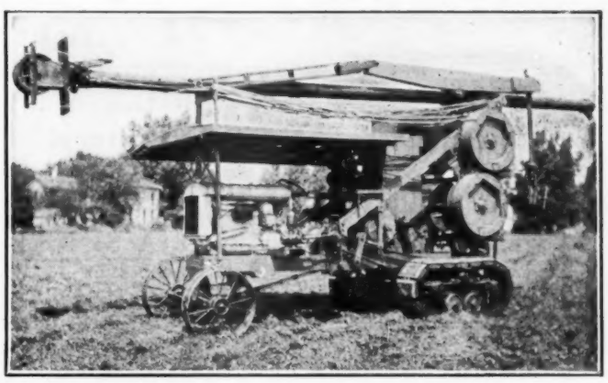
Small boilers and heating plants—
Three thousand cubic feet of gas equals 1 bbl of oil; 11,000 cubic feet of gas equals 1 ton of coal.

Forges and blast furnaces—
Five thousand cubic feet of gas equals 1 bbl. of oil.

All drilling tools, swedge nipples, tubing catchers, etc., are heated in furnaces fired with gas. The owners and managers of these shops were of the opinion

The OHIO CLEANER

A Cleaning, Prospecting and Drilling Machine



Operators who own **OHIO CLEANERS** tell us that few machines return their original cost as quickly as does this remarkable outfit. For their **OHIO CLEANERS** are seldom idle, owing to the wide number of uses to which they may be put.

The **OHIO CLEANER** not only cleans wells **clean**, but may be used for spudding in and drilling new wells, prospecting, pulling casing, and drilling old wells deeper. It's a real utility machine—a profit-maker for the operator who owns it. Let us send you our literature, which explains just **how** and **why** it will make money for you.

The Traction Machine Co.
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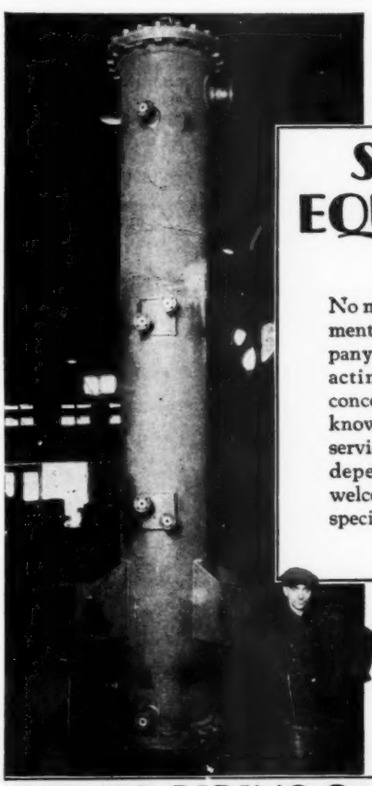


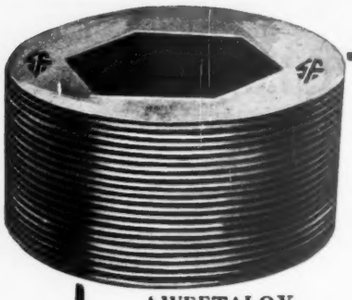
Continuous Gasoline Treater, 22" O. D. Complete Dished Heads and Supporting Frames welded on.

SPECIAL EQUIPMENT

No matter what the requirements, Power Piping Company can meet your most exacting needs. The largest concerns in the oil industry know that "Power Piping" service is unfailing and ever dependable. Our engineers welcome consultation on any special problems.

Power Piping
FOR EVERY OIL FIELD NEED

POWER PIPING CO. PITTSBURGH



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Victory—

in the great fight against corrosion in the Oil Refinery!

That's what the SWEETALOY STILL PLUG has achieved. Made of nickel-chromium-iron alloy. NOT A SINGLE PLUG HAS AS YET BEEN REPLACED! WHY NOT GIVE IT A TRIAL?

Write for full details—TODAY!

WM. J. SWEET FOUNDRY CO.
IRVINGTON, N. J.

McGREGOR

"The Working Barrel That Works"

Over sixty thousand now in use from Pennsylvania to Argentine and from Oklahoma to India wherever oil is produced.

No Barrel can compete with the McGregor in price and saving. It comes with the barrels, valves, valve stem all complete at a price slightly more than what the old style Barrel would cost. Pumps as fast as old style barrels that are attached to the tubing.

The only pulling done when you have a McGregor in use is the rods as the complete Barrel is fastened to the rods and comes out when they are pulled. TUBING PULLING is done away with as far as the Working Barrel is concerned. Made for all size tubing. Use "Mac" Ball and Seat.

See your dealer or write us for circular.

In ordering parts refer to these letters

McGREGOR WORKING BARREL CO., Inc.
Sole Manufacturers
BRADFORD, PENNA.

Gottkool
Gott Water can
Clean-pure sparkling water ready to drink at all times. No matter where you are, the GOTT Water Can is health insurance.
Comes in 1½, 3, 5 and 10 gallon sizes. Your supply store has them.
H. P. GOTT MFG. CO.
WINFIELD, KANSAS
Gott
WATER CAN
PURE WATER

that oil was superior to gas for heating of steel to high temperatures. The common idea held by these men was that with gas too much time was required to bring the steel to temperature and that they experienced trouble with the formation of scale. With a CO_2 analyzer we set the mixture so that we had little or no free oxygen in the furnace. These furnaces are run at a temperature near 2,400 degrees Fahrenheit, the same as when using oil. All the blast and annealing furnaces in our towns are now heated with gas. The highest temperature furnace that I know of in this district is a furnace used to bring steel nipples to welding temperature.. A temperature of 3,500 degrees Fahrenheit, according to the shop foreman, is attained in this furnace. Preheated air is not used.

Preheated air is used in Oklahoma in several refineries and at two or three power plants and at all glass plants. The refineries and power plants preheat the air for combustion by passing the hot flue gases through tubes that are cooled by incoming air to the furnace In glass plants a tunnel for each side of the glass vat leads to a common stack. These tunnels are filled with brick or tile baffles. For a period of 15 to 20 minutes the hot flue gases pass through one tunnel; the air for combustion is forced through the other tunnel. Then the damper is thrown and the tunnel formerly being heated by the flue gases is now used to preheat the incoming air and the tunnel just cooled by air is used to store the heat that would be otherwise wasted. The process is continually repeated every 15 or 20 minutes all the time that the plant is in operation.

The most wasteful user or fuel in Oklahoma today is the zinc smelter. Some smelters burn 6,000,000 cubic feet per day and the only work accomplished by the heat is the distillation of a few tons of zinc. Practically all the heat is dissipated through the furnace walls or through the hundreds of small openings in the furnace walls.

Burners and Burners

There are burners and burners. Some give a blue flame fire, some a flameless or clear fire, and some a yellow flame fire, but assuming that enough of the right-size burners are properly installed all of the common burners can be operated to give the same results, when used under boilers or similar equipment. The type of burner is usually selected because of its operation more than fuel saving. I have either tested or witnessed tests on almost all types of gas burners and have found the chief difference between them is not in fuel economy but ease and safety of operation, with the power to produce large quantities of heat quickly, often in a limited fire box without pulsating or drumming.

This tendency for burning gas to pulsate, especially noticeable in small fire boxes, such as drilling fire box contained types or Scotch marine boilers, is little understood and very difficult to overcome.

While it is possible to obtain the same or nearly the same efficiency with the various blue, clear or yellow flame fires, we have found that with a yellow flame fire the operator can be taught to set his draft as accurately as can an engineer with a CO_2 analyzer.

The majority of the larger combination oil and gas burners throw the air for combustion into a swirl by means of blades set at an angle in the air passage. The purpose of this swirl has never been fully explained to me and I have seen reports of efficiency tests, burners with swirling air registers and burners with straight-flow registers. I could notice no marked advantage in efficiency. The swirling motion does make it possible to have a long flame with a short horizontal travel. This characteristic tends to burn the fuel in the front end of the fire box and consequently makes it possible to burn more fuel without flame impingment on the tubes. This type burner is better suited for the larger furnace and is usually manufactured with a capacity of approximately 20,000,000 B.t.u. per hour either oil or gas fuel.

Recently several engineering companies have been advertising trifuel burners for gas, oil and pulverized coal.

The movable, so-called air door on burners should rarely, if ever, be used to control the flow of air into the furnace. The purpose of this door is to keep the radiant heat off the boiler room floor and to cause the air to flow into the burner in a regular manner from all sides. The quantity of air should usually be controlled by the damper. When the air is controlled by the burner door the full draft of the stack is felt in the furnace and the air leakage is greatly increased.

Within certain limits if one boiler will carry the load it is better to use one than two. In our experience, from both operating and fuel economy points of view it is better to keep a building moderately warm at all times than to let the building become cold and attempt to heat up in an hour or two. When the fire is completely turned out the air doors on the burners and the dampers should be closed to prevent unnecessary rapid cooling off of the fire box and boiler.

Few Accidents With Gas

During the last several years we have had but few accidents with gas. In two of these, men were burned when they put a light in the boiler without first examining the gas supply valve to see if the valves were closed. One rather violent explosion occurred one night when an engineer of a building noticed a small gas leak in a combination lighting fixture. The building was of the reinforced concrete type with partition walls laid up of hollow tile. The gas leak appeared to the engineer to be in the pipe connections covered by a sleeve that was held to the wall by two screws. He loosened the screws and started to lift off the electric fixture. The current was in the electric fixture connections. When the fixture moved there was a violent explosion in the hollow tile wall. The entire section of the double tile wall which was perhaps 10 feet square was split. Many of the tile were blown into small pieces and hurled with force sufficient to leave deep marks in the opposite wall of the room. The remaining one-half of the split wall was slightly bulged into the next room. The engineer escaped with a few bruises.

Another explosion occurred at an industrial plant here. Two new industrial furnaces connected to a common stack had had a small fire put in them. Some time later the men in charge noticed that the fires were not acting in the proper manner. It seemed the fire in one had been completely smothered. There were two men at the furnace. One shut off the gas; the other went behind the furnace and opened the damper which had up to this time been closed. It seems that it had been customary to warm up the old furnace with the damper closed. Instantly there was a violent explosion in the furnace; the setting was completely ruined. Neither man was injured, although the force of the explosion gave the reinforcing 8-inch beam a 3-foot or 4-foot bend and threw brickbats about the building.

We have had some trouble due to modern construction of the almost air-tight boiler rooms. We are continually calling to the attention of the owners and managers of the new buildings the necessity of an air supply to their boiler rooms that can not be closed. Considering that practically all fuel used in Tulsa is gas, this is not a bad record in that not one person has been severely injured in an industrial gas plant or boiler room, and that the total damage done could be covered by a few thousand dollars.

Combustion

Combustion is merely the chemical union of an inflammable substance with oxygen. Combustion is rapid oxidation; the result and ultimate products are usually the same whether oxidation is rapid or slow. The opposite of oxidation is called reduction and consists of the removal of oxygen from various compounds. An oxidizing atmosphere is one that carries free oxygen, a reducing

atmosphere is one that carries no free oxygen.

The combustible constituents of all fuels are carbon and hydrogen with the exception of a small percentage of impurities such as sulphur. Coal is principally carbon. Oil and gas are composed of carbon and hydrogen. The percentage of hydrogen increases with the decrease in specific gravity; in methane, CH_4, the chief member of the natural gas, we find 25 per cent hydrogen and 75 per cent carbon. This hydrogen during combustion burns to water, the latent heat of which is usually lost. Approximately 10 gallons of water are formed by the combustion of 1,000 cubic feet of gas.

Air, the principal supply of oxygen, is composed by volume oxygen 20.91 per cent, nitrogen 79 09 per cent. The nitrogen, an inert gas, passes through the furnace diluting the active elements of the fuel and the oxygen, and reduces the efficiency of the heating equipment.

The kindling temperature of natural gas is higher than that of either coal or oil, being about 1,240 degrees Fahrenheit. Due to this fact, when burning gas it is very essential that the burner and furnace should be selected with this in mind and so arranged that combustion is complete in the hot fire box.

Coal and oil are supposedly better fitted for certain purposes than gas. This idea came about by reason that both coal and oil have a higher theoretical flame temperature than gas. The theoretical flame temperature of the three fuels are, approximately:

Coal, 3,796 degrees Fehrenheit; oil, 3,909 degrees Fahrenheit; gas, 3,650 degrees Fahrenheit.

While it is theoretically possible to obtain a higher flame temperature with both coal and oil this advantage is usually lost in that it is possible to burn gas with less excess air than with oil or coal.

I have observed gas-fired boilers operating at 300 degrees rating; a stack temperature less than the steam temperature leaving the superheater. A lower fire box temperature and lower stack than with oil or coal the boiler being fired at the same rating. This was true even with clean boilers.

That the almost flameless or clear gas fire when short of air will usually burn CO without smoke.

That the yellow flame gas fire when short of air will usually produce a lot of smoke.

I have seen various types of burners tested under a shell type still. In each case the amount of gas used per hour was the same—15,000 cubic feet. The air for combustion was so controlled that in each test the CO_2 readings were always near 11 per cent The clear or so-called flameless fire gave both a higher fire box temperature and a higher stack temperature than the bright yellow flame fire and consequently used more fuel per barrel of crude run to the still.

The lowest temperature gas flame that I ever saw measured was 1,800 degrees Fahrenheit. The highest was in the above-mentioned blast furnace in which the operator claims to have obtained near 3,500 degrees Fahrenheit.

That the gas calorimeter gave approximately the same heat value for a gas when using a wet meter, that increased the gas volume by the addition of 2 or 3 per cent water vapor as it did when the gas was measured dry.

NEW LOCATIONS IN TEXAS PANHANDLE AND NORTH AND WEST TEXAS FIELDS

TEXAS PANHANDLE

Carson County

Denson and others' No. 1 W. E. Cobb, 930 feet south and 380 feet west of NE cor. of west half of NW of Section 184, Block 3, I.&G.N. Survey. Dillard and others' No. 1 T. A. Powers, 330 feet north and west of SE cor. of SE of Section 248, Block B-2, H.&G.N. Survey.

Gray County

Holbrook and others' No. 1 J. E. Williams, 330 feet north and east of SW cor. of South 40 acres of NE of Section 15, Block 1, A.C.H.&B. Survey. Meade Brothers' No. 1 B. E. Finley, 1,650 feet north and 330 feet east of SW cor. of the B. E. Chaney Survey. Phillips Petroleum Co.'s No. 4 W. Jackson, 990 feet north and 330 feet west of the SE cor. of the south half of NE of Section 88, Block B-2, H.&G.N. Survey. Prairie Oil & Gas Co.'s No. 1 Worley & Reynolds, 330 feet south and west of NE cor. of SW of NE of Section 61, Block 3, I.&G.N. Survey. Wilcox-Pampa Oil Co.'s No. 28 Worley & Reynolds, 330 feet north and west of SE cor. of NW of NE of Section 61, Block 17 H.&G.N. Survey.

Wheeler County

Clark and others' No. 1 M. S. & J. Purcell, C of NW of SW of Section 52, Block 17, H.&G.N. Survey.

NORTH CENTRAL AND WEST TEXAS

Archer County

Archer Drilling Co.'s No. 1 A. D. Thompson, 150 feet north and east of SW cor. of west half of Lot No. 7, Section 20, A.T.N.C.L. Survey. Fain-McGaha Oil Corporation & United Producers Co.'s No. 9 L. F. Wilson-B, 150 feet south and 1,050 feet east of NW cor. of Lot No. 20, Wilson's Geraldine Subdivision. F. H. Gohlke and others' No. 2 Jones & Warden, 150 feet south and east of NW cor. of Lot No. 236, Geraldine Subdivision. Kruger and others' No. 1 W. L. Andrews, 150 feet north and east of SW cor. of the north 80 acres of the W. L. Andrews 322 acre tract out of Section 185, S.A.&M.G. Survey, A-446. Magnolia Petroleum Co.'s No. 1 J. R. Parkey, 150 feet south and west of NE cor. of the W half of NW of Section 11, Block 3, H.&T.C. Survey. Minnich & Dale Oil Corporation's No. 1 W. T. Hutcheson, 150 feet south and west of NE cor. of the south 30 acres of Lot No. 6, Power's Subdivision, Section 123, A.T.N.C.L. Survey.

Petroleum Producers Co.'s No. 1 L. F. Wilson-F, 150 north, 450 feet east SW cor. of Lot No. 5, Wilson's Geraldine Subdivision. Petroleum Producers Company and others' No. 4 L. F. Wilson-E, 450 feet north and 150 feet east of SW cor. of Lot No. 13, Wilson's Geraldine Subdivision. Same company's No. 5 L. F. Wilson-E, 150 feet north and 1,050 feet east of SW cor. of Lot No. 13, Wilson's Geraldine Subdivision. Same company's No. 6 L. F. Wilson-E, 450 feet north and east of SW cor. of Lot No. 13, Wilson's Geraldine Subdivision. United Producers Co.'s No. 1 Kemp & Kell, 250 feet south and 450 feet east of NW cor. of Section 17, Denton County School Land, League 3, A-117, being 115 feet north and 130 feet west of SE cor. of Lot No. 14, Block 9, Town of Holliday. W. C. Young and others' No. 2 W. H. Taylor, 150 feet south and 200 feet east of NW cor. of the N half of NW of SE of Section 1, S.P.R.R. Survey, A-428. E. G. Christie's No. 1 D. W. Fish, 658 feet north and 150 feet west of SE cor. of Section 85, Club Ranch Subdivision. Consolidated Oil Co.'s No. 1 L. C. Herron and others, 150 feet north and 1,394 feet west of NE cor. of Section 1 832 T.E.&L. Survey, being 150 feet north and 1,394 feet west of the most easterly SE cor. of the L. C. Garvey Survey, A-1,282. F P. Rose's No. 2 J. R. Garvey, 150 feet north and 450 feet east of SW cor. of the east 60 acres of the north 160 acres of Section 1,856 T.E.&L. Survey.

Brown County

Baker and others' No. 3 J. L. Cross, 450 feet south and 150 feet west of NE cor. of their lease out of the James Kinney Survey No. 624. Charter Oil Co.'s No. 5 H. Byler, 552 feet north and 150 feet east of SW corner of their 40-acre lease out of the T.&N.O. Survey No. 43. E. M. Curry's No. 3 W. H. G.

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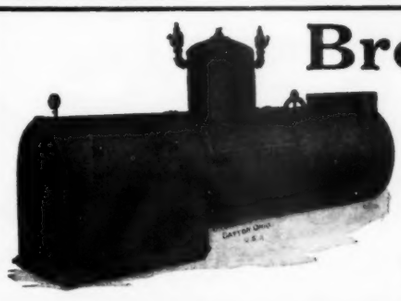

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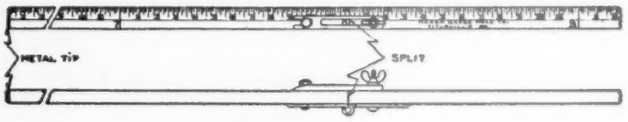

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Classified Wants Department

Chambers, 1,050 feet north and 450 feet west of SE cor. of the west 200 acres of the W. H. G. Chambers 401-acre tract out of the G. Logan Survey No. 147. J. H. Green and others' No. 1 M. W. Bull, 2,175 feet south and 3,700 feet west of NE cor. of the R. Honeycutt Survey No. 623, being 200 feet north and 575 feet east of SW cor. of their 30.68 acre lease. A. C. McGahhey's No. 1 Mrs. J. A. Gaines, 150 feet south and east of NW cor. of the South 75 acres of the Mrs. J. A. Gaines 150 acre tract out of SW of Section 35, H.T.&B. Survey. Milham Corporation's No. 1 W. W. Rosser, 150 feet north and 780 feet west of the SE cor. of W half of the W. W. Rosser 80-acre tract out of the W. Q. Cross Survey.

Callahan County

Watchorn Oil & Gas Co.'s No. 1 E. L. Finley, 700 feet north and west of SE cor. of NW of Section 73, Bayland Orphan Asylum Land.

Clay County

Ohio Mid Cities Corporation's No. 1 Luther Wright, 150 feet south and 450 feet west of NE cor. of Section 2,632, T.E.&L. Survey, being 150 feet north and 450 feet west of SE cor. of their lease.

Coleman County

Eastland Oil Company and others' No. 1 C. Q. Hassard, 150 feet south and 5,040 feet east of NW cor. of the J. T. Dillon Survey No. 756, and located in Section 2, Block 1, G.H.&H. Survey. Humphrey Brothers' No. 1 U. Henderson, 3,815 feet north and 1,375 feet west of SE cor. of the H. Crocheron Survey No. 656. Prairie Oil & Gas Co.'s No. 1 J. P. Morris, 3,300 feet south and 1,980 feet east of NW cor. of the C. M. Mann Survey No. 71. D. H. Byrd and others' No. 1 M. G. Chaney, 2,142 feet south and 1,917 feet west of NE cor. of the John Gray Survey No. 662. Meeks & Duffield and others No. 1 W. D. & A. Taylor, 200 feet north and east of NW cor. of the W. K. Richardson 193-acre tract and located on the W. D. & A. Taylor tract out of the S. Overby Survey No. 78.

Concho County

Douglas Oil Co.'s No. 1 A. Harrell, 3,200 feet south and 584 feet west of NE cor. of the Johan Moor Survey No 27.

Crane County

Gulf Production Company's No. 51 J. T. McElroy, 1,442 feet south and 1,650 feet west of NE cor. of their lease out of Section 201, Block F, C.C.S.D.&R.G.N. G.R.R. Survey. C. C. Duffey and others' No. 1 Cowden Brothers & Co., 660 feet north and 1,680 feet east of SW cor. of Section 18, Block X, C.C.S.D.&R.G.N. G.R.R. Survey.

Crockett County

Government Potash Test, No. 5 (Texas No. 3) Harris Brothers, 100 feet south and east of NW cor. of Section 16, Block HH, G.C.&S.F.Survey. Government Potash Test, No. 8 (Texas No. 5) University Land, 150 feet north and east of SW cor. of Section 5, Block 14, University Land. Taylor-Link Oil Co.'s No. 1 L. P. Peck, 330 feet southeast of the NW line and 330 feet southwest of NE line of Section 37, Block 31, H.&T.C. Survey. Same company's No. 2 L. P. Powell, 150 feet south and 1,125 feet east of NW cor. of Section 52, Block BB, G.C.&S.F. Survey, being 150 feet south and west of NE cor. of their 14-acre lease. The California Co.'s No. 1 L. P. Powell, Lease 1, 341 feet north and 333 feet west of SE cor. of Section 62, Block BB, G.C.&S.F. Survey. Tidal Oil Co.'s No. 1 University Land, 330 feet north and west of SE cor. of SW of Section 8, Block 50, University Land. Gulf Production Co.'s No. 3 L. P. Powell D, 150 feet north and west of the most southerly SE cor. of their lease of 160 acres out of Section 62, Block BB, G.C.&S.F. Survey.

Foard County

Panhandle Refining Company and others' No. 1 J. F. & W. J. Long, 1,400 feet north and 1,273 feet west of SE cor. of the John M. Seaton Survey, A-496.

Howard County

F. H. E. Oil Co., No. 2 Dora Roberts-E, 2,340 feet south and 2,440 feet west of NE cor. of Section 136, Block 29, W.&N.W. Survey. Magnolia Petroleum Co.'s No. 8 Dora Roberts, 990 feet north and 330 feet east of the SW cor. of Section 136, Block 29, W.&N.W. Survey.

Fisher County

Cranfill & Reynolds' No. 2 J. A. Young, 660 feet north and east of SW cor. of NE of Section 208, B.B.B.&C. Survey.

Glasscock County

Roxana Petroleum Corporation's No. 1 R. L. Boston, 1,320 feet north and west of SE cor. of Section 30, Block 34, Township 4 South, T.&P.R.R. Survey.

Irion County

Wesley West and others' No. 1 J. D. Suggs, 1,650 feet north and west of SE cor. of Section 19, Block 1, H.&T.C. Survey.

Jack County

T. W. Owens and others' No. 1 D. R. Sewell, 828 feet north and 195 feet west of the most easterly SE cor. of the Thomas F. West Survey, A-1,499. Hartt Petroleum Co.'s No. 1 J. L. Mask, 320 feet north and 1,263 feet west of SE corner of the J. L. Mask 160-acre tract out of Section 2,708, T.E.&L. Survey. Christie Brothers' No. 4 J. A. Jones Estate, 150 feet north and 1,750 feet east of SW cor. of their 120-acre lease out of Section 5, S.P.R.R. Survey, A-550.

Menard County

Carpenter & Robbins' No. 2 Kothmann, 150 feet north and 450 feet west of SE cor. of SW of Section 22, Indianola R.R. Survey. Sabiens & Bevens' No. 1 F. Wilhelm, at the C of Section 28, Indianola R.R. Survey. Sorrell & Jackson's No. 1 F. Wilhelm, C of NE of Section 6, Block C, Brook & Burleson Survey.

Mitchell County

Owen & Sloan Oil Co.'s No. 1 G. M. Brown, 330 feet south and west of NE cor. of Section 81, Block 26, T.&P.R.R. Survey. The California Co.'s No. 5 W. L. Foster, 2,390 feet north and 990 feet east of SW cor. of Section 6, Block 29, Township 1s, T.P.R.R. Survey.

Montague County

Pure Oil Co.'s No. 6 Mrs. S. F. Loy and others, 4,697 feet north and 200 feet east of the most southerly SW cor. of its 80-acre lease out of Lot No. 4, J. W. Jones Subdivision, William Donoho Survey, A-178. Lanfair and others' No. 1 A. C. McNabb, 800 feet southwest of the northeast line and 150 feet southeast of the northwest line of the J. M. McCollier Survey, A-489.

Palo Pinto County

Mark Dalton and others' No. 2 R. S. Dalton, 280 feet north and 788 feet east of SW cor. of north half of Section 1,700, T.E.&L. Survey. Nelson Oil Syndicate's No. 1 J. B. Hardin, 1,000 feet south and west of NE cor. of Section 29, Burleson County School Land, League 2.

Pecos County

Bateman & Price's No. 1 Pecos River Bed, 150 feet north and west of NE cor. of Section 29, Block 12, H.&G.N. Survey, located in the bed of the Pecos River. Humble Oil & Refining Co.'s No. 8 Mrs. M. A. Smith, 990 feet north and 330 feet east of SW cor. of Section 36, Block 194, G.C.&S.F. Survey.

Upton County

Government Potash Test No. 6 (Texas No. 2) A. S. Burleson, 660 feet south and west of NE cor. of the Sun Oil Co.'s 160-acre lease out of Section 100, T. C. Jones Survey, A-746. Government Potash Test No. 7 (Texas No. 1) Ed S. Hughes Co., 1,161 feet south and 330 feet east of NW cor. of Roxana Petroleum Corp.'s 100-acre lease out of Section 4, William Teer Survey, A-806.

Shackelford County

Big State Oil Co.'s No. 5 Russ-Webb, 370 feet north and 150 feet east of SW cor. of Section 16, Block 11, T.&P.R.R. Survey. Decatur Oil Co.'s No. 1 R. J. Moberly, 520 feet north and east of SW cor. of NE of SW of Section 61, Block 12, T.&P.R.R. Survey. J. P. Harris and others' No. 3 J. B. Matthews, 150 feet south and 1,560 feet east of NW cor. of Section 57, Block 10, E.T.R.R. Survey. Petroleum Producers Co.'s No. 4 J. B. Matthews, 750 feet south and 150 feet east of NW cor. of Section 28, Block 10, E.T.R.R. Survey.

Roeser & Pendleton's No. 59 W. I. Cook-A, Section 60, 1,196 feet north and

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1,350 feet west of SE cor. of west half of the W. I. Cook tract in Section 59, and located in Section 60, Block 10, E. T R.R. Survey. Same company's No. 60 W. I. Cook-A, Section 60, 516 feet south and 156 feet east of NW cor of NE of Section 60, Block 10, E.T.R.R. Survey. Tannehill Oil Co.'s No. 5 J. B. Matthews, Section 33, 750 feet south and 150 feet west of NE cor. of east half of NE of Section 33, Block 10, E.T.R.R. Survey.

Wichita County

Bridwell & Heydrick's No. 23 W. T. Waggoner, 775 feet north and 200 feet east of SW cor. of their 80-acre lease out of Section 1, Seale & Morris Survey, A-393. L. P. Hammond's No 5 J. F. Boyd, 150 feet south and 475 feet east of NW cor. of Block 50, Kemp Wichita Valley Land. H. Hines and Humble Oil & Refining Co.'s No. 1 J. L. & T. J. Waggoner, 842 feet south and 530 feet east of NW cor. of Lot No. 2, Section 2, G.C.&S.F. Survey, A-772 Ryan Petroleum Co.'s No 93 G. L. Nance, 650 feet south and 3,100 feet east of NW cor. of Sam O. Fowler Survey, A-78. The Texas Company's No. 1 C. A. Mangold, 150 feet north and west of SE cor. of Lot No. 37, Mangold Subdivision, P. Castleman Survey, A-35.

Wilbarger County

Barkley & Meadows' No. 5 W. T Waggoner-A, 205 feet south and east of NW cor. of SE of SW of Section 24, Block 4, H.&T.C. Survey. Consolidated Oil Co.'s No 1 W. T. Waggoner, Section 5, 150 feet north and 214 feet west of SE cor. of south half of NW of Section 5, Block 5, H.&T.C. Survey. C. F. Kolp's No. 1 W. T Waggoner, Section 8, 205 feet south and west of NE cor. of Section 8, Block 4, H.&T.C. Survey. E. B. Lawson's No. 4 W. T Waggoner-A, 205 feet south and west of NE cor. of SW of SE of Section 25, Block 4, H.&T.C. Survey. Murchison Oil Co.'s No. 2 W. T Waggoner-F, 150 feet south and east of NW cor. of south 160 acres of Section 3, S.P.R.R. Survey.

Wink'er County

Atlantic Oil Producing Co.'s No. 2 Grisham-Hunter G, 440 feet south and 330 feet east of NW cor. of Section 45, Block 26, School Land. Atlantic Oil Producing Co. and Collett's No. 7 T. G. Hendrick-F, 2,200 feet south and 330 feet east of NW cor. of Section 40, Block 26, School Land. Same company's No. 8 T. G. Hendrick-F, 1,320 feet south and 330 feet east of NW cor. of Section 40, Block 26, School Land Cranfill & Reynolds' No. 1 T. G. Hendrick-E, 2,310 feet south and east of NW cor. of Section 33, Block 26, School Land. Humble Oil & Refining Co.'s No. 3 T. G. Hendrick-B, 440 feet north and 330 feet east of SW cor. of Section 39, Block 26, School Land.

Landreth Production Corp. and Roxana Petroleum Corp.'s No. 3 Grisham-Hunter, 1,320 feet south and 330 feet east of NW cor. of Section 45, Block 26, School Land. Same corporation's No. 2 T. G. Hendrick-C, 440 feet north and 330 feet east of SW cor. of Section 40, Block 26, School Land Marland Oil Co.'s No. 1 T. G. Hendrick-A, 330 feet north and west of SE cor. of Section 29, Block 26, School Land. Prairie Oil & Gas Co.'s No. 2 T. G Hendrick, 440 feet north and 2,310 feet east of SW cor. of Section 40, Block 26, School Land. Republic Production Co.'s No. 3 Ida Hendrick-C, 1,650 feet south and 990 feet west of NE cor. of Section 42, Block B-5, School Land. Roxana Petroleum Corp.'s No. 3 Grisham-Hunter-A, 440 feet south and 2,310 feet east of NW cor. of Section 45, Block 26, School Land. Southern Crude Oil Purchasing Co.'s No. 4 Ida Hendrick, T-88-H, 330 feet north and east of SW cor. of Section 28, Block B-5, School Land.

Young County

Atlantic Oil Producing Co. & Williams' No. 1 W. H. H. Smith, 150 feet north and east of SW cor. of north 150 acres of Section 2,705, T.E.&L. Survey. C. W. Boller and others' No. 1 Charles Minkley, 150 feet north and west of SE cor. of NW of north 200 acres of Section 1,990, T.E.&L. Survey. Chancellor & Anderson's No. 1 W. F. Grubbs, 150 feet south and west of NE cor. of west 150

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TEXAS OIL MAPS
County and District Catalog on Application
HEYDRICK MAPPING COMPANY
Wichita Falls, Texas

acres of north 150 acres of Section 635, T.E.&L. Survey. Continental Oil Co.'s No. 1 A. Weichman, 150 feet south and east of NW cor. of north half of NW of Section 173. T.E.&L. Survey.

C. W. Clark and others' No. 1 D S. Vance, 150 feet north and 1,318 feet east of SW cor. of Section 2,716. T.E.&L. Survey. J. C. Cunningham's No. 8 B. Hawkins, 750 feet south and 1,170 feet west of NE cor. of Section 1,914, T.E.&L. Survey. Gyset Oil Co.'s No. 1 S. Barouset, 450 feet north and east of SW cor. of NE of west half of north 320 acres of A. Wood Survey, A-1,274. P. F. Gwynn's No. 1 H. D. Kunkel-B, 150 feet north and west of SE cor. of east 25 acres of north 50 acres of east 110 acres of SW of Section 4, B.B.B.&C. Survey, A-1,838.

Hammon & Garrett's No. 1 J. H. Hunt, 150 feet north and east of SW cor. of north 60 acres of south 100 acres of east 138 acres of Section 175, T.E.&L. Survey. R. L. Morrison and others' No. 1 J. M. Keen, 1,114 feet north and 1,504 feet west of SE cor. of south 110 acres of SW (A-1,954) of Section 3, G.B.&N. Co. Survey. Pennell Oil Co.'s No. 6 J. L. Boone, 450 feet south and east of NW cor. of Section 1, B.B B.&C. Survey, A-34. Prairie Oil & Gas Co.'s No. 1 C. F. Kunkel, 1,173 feet north and 150 feet east of SW cor. of their 175-acre lease out of Section 4, B.B.B.&C. Survey, A-1,701. Same company's No. 2 C. F. Kunkel, 1,473 feet north and 150 feet east of SW cor. of their 175-acre lease out of Section 4, B.B.B.&C. Survey, A-1,701.

E. R. Riggs and others' No. 6 J. B. McKinley, 150 feet south and 450 feet west of NE cor. of west 200 acres of Section 1,489, T.E.&L. Survey. F. P. Rose and others' No. 1 H. D. Kunkel, 150 feet south and west of NE cor. of south 10 acres of west 60 acres of SW of Section 4, B B.B.&C. Survey, A-1,838. Shadbolt & Creighton's No. 1 W. E. Baker, 150 feet south and east of NW cor. of west half of NW (A-1,862) of Section 1, G.B&N. Co. Survey. E. J. Zilkey's No. 1 R. E. Hill, 950 feet north and 150 feet east of SW cor. of Section 195, T.E.&L. Survey. T. G. Shaw and others' No. 1 W. C. True, 200 feet north and east of SW cor. of R. Burch Survey, A-2,150.

Corrected Locations

Archer County—Tidal Oil Co.'s No. 4 J. H. Turbeville-A, 1,170 feet south and 150 feet east of NW cor. of R. Carson Survey No. 152.

El Paso County—Sillix and others' No. 1 W. D. Malone, 2,200 feet southeast of northwest line and 2,200 feet northeast of the southwest line of Section 46, James M. Day Survey.

Jones County—Roeser & Pendleton and Stebbins Oil & Gas Co.'s No. 2 G. H. Higgs, 1,365 feet south and 150 feet west of NE cor. of Section 30, W. T. Scott Survey, A-310.

Winkler County—Southern Crude Oil Purchasing Co.'s No. 3 Ida Hendrick, T-88-A, 440 feet south and 330 feet west of NE cor. of Section 44, Block 26, School Land. Same company's No. 4 Ida Hendrick, T-88-A, 1,320 feet south and 330 feet west of NE cor. of Section 44, Block 26, School Land. Same company's No. 2 T. G. Hendrick, T-88-K, 1,320 feet south and 330 feet west of NE cor. of Section 41, Block 26, School Land. Same company's No. 3 T. G. Hendrick, T-88-K, 2,200 feet south and 330 feet west of NE cor. of Section 41, Block 26, School Land. Same company's No. 4 T. G. Hendrick, T-88-K, 2,200 feet north and 330 feet west of SE cor. of Section 41, Block 26, School Land. Same company's No. 5 T. G. Hendrick, 1,320 feet north and 330 feet west of SE cor. of Section 41, Block 26, School Land.

Young County—E. R. Riggs and others' No. 4 J. B. McKinley, 150 feet north and 450 feet west of SE cor. of west 200 acres of Section 1,489, T.E.&L. Survey. Shaw-Riggs and others' No. 4 J. B. McKinley, 450 feet south and 150 feet east of NW cor. of north 40 acres of east 65 acres of Section 1,489, T. E. & L. Survey.

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Detailed Operations in All Fields for Month of April

SUMMARY OF ALL FIELDS
Wells completed

Field—	Comp.	Prod.	Dry	Gas
Eastern	278	3,736	26	46
Central Ohio	15	35	4	9
Lima	12	590	3	2
Indiana	7	78	5	0
Michigan	13	632	4	1
Illinois	9	47	5	1
Kentucky	125	3,675	43	4
Tennessee	9	495	1	2
Mississippi	1	0	1	0
Oklahoma	378	59,762	146	67
Alabama	1	0	1	0
Kansas	116	18,834	45	8
Texas Panhandle	38	9,692	12	11
North Central Texas	346	14,588	165	14
East Central Texas	7	0	7	0
West Texas	71	227,670	21	0
Southwest Texas	55	858	23	18
East Texas	10	0	3	7
Louisiana	56	3,868	21	29
Arkansas	12	3,440	4	0
Wyoming	3	802	1	0
Montana	28	5,466	8	7
Colorado	14	516	10	0
New Mexico	5	430	3	1
Gulf Coast	127	36,634	55	2
Utah	4	0	2	2
Total April	1,746	391,841	619	231
Total March	1,646	414,027	532	220
Difference	100	22,186	87	11

Rigs and Wells Drilling

Field—	Rigs	Drg.	Ttl.
Eastern	100	318	418
Central Ohio	29	62	91
Lima	8	18	26
Indiana	1	11	12
Illinois	10	33	43
Michigan	1	16	17
Kentucky	8	161	169
Tennessee	1	14	15
Mississippi	2	22	24
Alabama	0	6	6
Florida	0	13	13
Oklahoma	132	661	793
Kansas	60	207	267
Texas Panhandle	39	125	164
East Central Texas	0	11	11
West Texas	107	334	441
North Central Texas	79	426	505
Southwest Texas	26	128	154
East Texas	3	16	19
North Louisiana	45	111	156
Arkansas	34	50	84
Wyoming	17	122	139
Montana	34	90	124
Colorado	16	93	109
Utah	3	26	29
New Mexico	15	78	93
Gulf Coast	36	150	186
Total April	806	3,332	4,138
Total March	796	3,271	4,067
Difference	10	61	71

Note—In the following report the Section, Township and Range are given first; then the farm, the owner, the serial number of the well and the initial production of the well. In lines where the Section, Township and Range are missing the wells are located in the Sections, Townships and Ranges which appear next above in the report.

OKLAHOMA FIELDS

Summary of Wells Completed

County—	Comp.	Prod.	Dry	Gas
Carter	10	1,150	6	0
Creek	37	2,077	21	4
Grady	20	300	4	14
Kay	21	0	14	7
Muskogee	50	2,282	27	4
Okfuskee	9	215	3	3
Okmulgee	23	114	6	10
Osage	31	11,163	7	1
Pontotoc	26	1,425	11	5
Pottawatomie	10	9,621	1	0
Seminole	42	23,434	13	4
Stephens	32	5,072	12	2
Tulsa	18	300	7	4
Wagoner	7	5	6	0
Miscellaneous	42	2,604	14	9
Total April	378	59,762	146	67
Total March	288	37,562	86	50
Difference	90	22,200	60	17

Summary of Rigs and Wells Drilling

County—	Rigs	Drlg.	Ttl.
Carter	4	27	31
Creek	21	67	88
Garfield	0	8	8
Grant	0	14	14
Grady	6	17	23
Hughes	1	8	9
Kay	7	18	25
Lincoln	0	5	5
Logan	0	25	25
Muskogee	5	50	55
Okfuskee	8	24	32
Okmulgee	11	36	47
Osage	19	27	46
Pawnee	4	13	17
Payne	2	5	7
Pontotoc	3	22	25
Pot awatomie	1	53	54
Seminole	18	110	128
Stephens	15	42	57
Tulsa	1	10	11
Wagoner	1	5	6
Miscellaneous	5	75	80
Total April	132	661	793
Total March	151	655	806
Difference	19	6	13

WELLS COMPLETED
CARTER COUNTY

23-1s-3w Lewis, Magnolia Pet. Co. 2.. 175
23-1s-3w Anderson, Magnolia Pet. Co. 2 173
22-1s-3w Crockett, Schermerhorn et al 2 100
11-2s-3w C. E. Brooks, Magnolia Pet. Co. 2 55
33-1s-3w Choens, Magnolia Pet. Co. 2.. 40
14-1s-3w Carter, Roxana Pet. Corp 1.. 200
19-1s-3w Winters, Simpson-Fell 1 235
20-1s-3w Ratliff, Rumble O. & R. Co. 3 57
23-1s-3w Gabrel, Magnolia Pet. Co. 2.. 75
11-2s-3w Brooks, Magnolia Pet. Co. 1.. 40

Wells completed 10
Production 1,150

CREEK COUNTY

7-19- 9 Tahkaney, Dixie Oil Co. 2 .. 320
18-19- 9 Sewell, Roxana Pet. Corp. 5.. 725
3-17-11 Fife, S. J. Smith et al 3 .... dry
4-17-11 Deenun, Winemiller O l Corp. 2 dry
9-17-11 Inman, Irelan et al 3 ..... dry
5-16-11 Fulsom, Pennock Oil Co. et al 14 ..... dry
13-19- 8 Miller, Burlingame & Sharp 15 12
16-15- 8 Knight, Shatter O. & R. Co. et al 1 35
11-14- 7 Grayson, Lima O. & G. Co. et al 1 ..... dry
16-14- 7 Nero, Bu-Vi-Bar Pet. Co. 1 .. dry
16-18-11 Weaver, Pure Oil Co. 3 ..... dry
4-17-11 Leeman, Sterling O. & G. Co. 1 dry
31-17-12 Crider, W. G. Banks 2 5
35-19- 7 Jessie, H. U. Bartlett et al 13 dry
17-17- 7 Tiger, Shaffer O. & G. Co. 1.. 467
18-17- 7 B. Cain, Bu-Vi-Bar Pet. Corp. 1-A 35
20-15- 8 Beaver, Gray Oil Co. 1-A .... dry
33-17-12 Gilcrease, The Prairie O. & G. Co. 2 ..... dry
20-17- 7 Coachman, The Prairie O. & G. Co. 1 113
26-18- 7 Brooks, The Prairie O. & G. Co. 1 ..... gas
19-19- 8 Smiley, Steinberger & Smith 1 dry
19-17- 7 Beesley, J. H. Markham Jr. 1-A 110
10-15- 8 Lewis, Olean Pet. Co. 1 ..... dry
21-18- 9 Walker, J. A. Hull Co. 3 ..... gas
35-18- 9 Strip, Roach et al 1 15
4-17-11 Fife, S. J. Smith et al 5 ..... dry
1-19- 9 Futrell, National Refining Co. 1 115
16-17-10 Hawkins, Chief Drlg. Co. 1 .. 125
16-17-11 Broadnax, Thompson & Black 4 ..... gas
9-16-10 Shreffner, Sibble & O'Hare 1.. dry
12-19- 8 Porter, J. B. Grieves 7 ..... dry
7-18- 7 Talamasc, J. W. Henry et al 1 gas
10-15- 8 Scott, Roland Oil Co. 1 ..... dry
8-19- 9 Murrell, Murry Oil Co. et al 1 dry
17-18- 9 West, Gled Oil Co. 1-A ..... dry
18-17- 7 Ca n, ensey Oil Co. 3 ..... dry
13-17-10 Thomas, Jackson & Wise 3 .. dry

Wells completed 37
Production 20,7
Dry 21
Gas 4
Gas production 57,670,000

GRADY COUNTY

13-4-8w Glover, Commerce Dev. Co. 2.. gas
14-4-8w Pettitt, Watchorn C. & G. Co. 1 gas
23-5-8w Sanford, American Drlg. Co. 7 gas
23-5-8w Farwell, Meridan Gas Co. 5-A .. gas
25-5-8w Serra.a, Oklahoma Gas Utilities Corp. 4 ..... gas
35-5-8w Dryden, Magnolia Pet. Co. 3 .. gas
14-4-8w Cox, Twin State Oil Co. 1 .... gas
12-4-8w Wood, J. J. Hall 1 ..... dry
25-5-8w Spencer, Nichlos et al 1-A .... dry
27-5-8w Glover, Okla. Natl. Gas Corp 4 gas
23-5-8w Sanford, Oklahoma Gas Utilities Corp. 3 ..... gas
2-4-8w Dryden, Brisco & Hall 2 ..... gas
17-3-5w Horton, Carter Oil Co. 5 50
Woods, Wirt Franklin Oil Corp. 1 ..... dry
23-5-8w Farwell, Meridian Gas Co. 1.. gas
35-5-8w McCaughtry, Kipp et al 3 .... gas
Smith, Magnolia Pet. Co. 6 .... gas
13-4-8w Pond, Commerce Dev. Co. 1 .. gas
16-3-5w Kayser, Gypsy Oil Co. 6 ..... dry
21-3-5w M. Kerans, Carter Oil Co. 4 .. 250

Wells completed 20
Production 300
Dry 4
Gas 14
Gas production 351,000,000

KAY COUNTY

10-27-1w Moore, Black Gold Oil Co. 3.. dry
19-27-1w Hall, Sinclair O. & G. Co. 1.. dry
7-27-2 Rustle, Burnham & Pochelle 1 gas
19-27-1w Hargrave, The Prairie O. & G. Co. 2 ..... gas
2-27-1w Deffner, Industrial O. & G. Co. 2 ..... gas
7-27-2 Rustle, Burnham & Pochelle 2 dry
34-26-2w McGaha, J. H. Markham Jr. 1 dry
20-29-1 Vaughn, Wilson Gas Co. 1 .... gas
33-27-1w Glenny, Rogers et al 1 .... gas
4-27-1 Quade, Martin et al 1 ..... gas
8-27-2 Vickery, Wentz O l Corp. 1 .. dry
5-26-1w Roberts, Rogers et al 1 ..... dry
17-29-1 Nixon, Carter Oil Co. & Ona Oil 1 ..... dry
9-27-1 Buesing, Martin et al 1 .... dry
Buesing, Nehr & Wilson 1 .... dry
7-27-2 Rustle Jr., Burnham & Pochelle 3 ..... dry
14-28-1w Nichols, Farmers Benefit O. & G. Co. 1 ..... dry
7-28-1 Bryn, John Goins et al 1 .... gas
11-27-1w Treadway, Argabright Oil Co. ..... dry
7-27-2 Williams, Wentz Oil Corp. 1.. dry
29-25-1w Heighley, Blackwell O. & G. Co. 2 ..... dry

Wells completed 21
Dry 14
Gas 7
Gas production 16,200,000

MUSKOGEE COUNTY

13-15-19 Benge, J. B. arks 1 ..... dry
22-13-15 Hutton, E. J. Lambert 1 ..... dry
20-15-15 Morris, Starr Dev. Co. 2 .... dry
21-15-19 Rogers, C. D. Bradley 1 .... dry
2-14-18 Callahan, J. L. D xon 6 ..... dry
6-14-19 Townlot, Ark-Add Oil Co. 2 .. 175
Townlot, G. Badgett 1 ..... gas
Townlot, Decius & Garrett 1 .. 500
Clark, Hale Ford Oil Co. 4 .. 280
Cobb, A. Tillman 1 ..... dry
Townlot, A. Tilman 1 ..... 2x0
Kell, Walton Oil Co. 1 5
McDaniel, Walton Oil Co. 2 .. 10
7-14-19 Kell, C. Grosscurth 1 ..... dry
21-15-15 Serrell, Jolly-Ogg Oil Co. 1 .. dry
30-15-15 Townsend, Vi e & Heflin 2 .. dry
32-15-15 Denton & Marsha'l 3 ..... dry
1-14-18 Cobb, C. A. Lovelace, Tr. 1 .. dry
2-14-18 Cherry, C. A. Lovelace, Tr. 2.. dry
6-14-19 Clark, Hale Ford Oil Co. 5 .. 60
Townlot, J. F. Lowerre 1 120
Townlot, Meek & Ederlington 1 dry
Townlot, J. L. Powell 1 50
Townlot, Ragland & Curly 1 .. dry
Townlot, M. Sells 1 72
Townlot, Simpson et al 1 .... gas
Townlot, Simpson et al 2 .... dry
20-15-16 Woodall, E. Price 3 ..... gas
6-14-19 Townsite, Ark-Add Oil Co. 3 dry
Townsite, Hett'ck et al 1 .... dry
Townsite, Holt-Lammers 1 .. dry
Townsite, H. Skelly et al 1 .. dry
Townsite, J. A. Swindler 1 .. dry
Kell, Walton Oil Co. 2 15
Kell, Walton Oil Co. 3 ..... dry
7-14-19 Cumpton, Walton Oil Co. 1 .. dry
1-13-19 Hixon, A. A. Rollestone 1 .. dry
8-15-15 Barnett, P. Boyle et al 6 125
Barnett, Bryan & Emery 1 150
9-15-15 Simmons, W. P. Pine et al 1.. dry
6-14-17 Fewell, L. Sinder 1 ..... dry
6-14-19 Townsite, Ark-Add Oil Co. 4.. 40
Townsite, C. F. Butler 1 .. dry
Townsite, C. A. Lovelace, tr. 1 90
Crittenden, W. J. Metzger et al 7 ..... dry
Townsite, Olean Pet. Co. 1 40
Townsite, Ragland et al 2 30
Cobb, S. Threlkeld 1 ..... dry
Townsite, F. Walters 1 40
14-13-18 Jordan, Sioux Oil Co. 2 ..... gas

Wells completed 50
Production 2282
Dry 27
Gas 4
Gas production 7,250,000

OKFUSKEE COUNTY

11-10-11 Summer, W. L. Umbrum 2 .. 150
12-10-11 Robinson, Atlantic O. P. Co. 1 ..... dry
19-11- 7 Gray, The Prairie O. & G. Co. 1 dry
33-12-11 Fields, Josey Oil Co. 3 50
33-10-11 Cubbie, Superior Oil Corp. 1-A gas
5-13-10 McKellip, Edgewood Oil Co. 1 dry
35-11- 9 Berryhill, E. L. Ro insen 2 .. 15
20-10- 9 Norris, Schermerhorn Oil Co. 1 gas
Sango, Future Development Co. 1 ..... gas

Wells completed 9
Production 215
Dry 3
Gas 3
Gas product on 23,000,000

OKMULGEE COUNTY

36-14-12 Prince, L. C. Wheeler et al 2.. gas
3-11-12 Calloway, B. Martin 2 ..... gas
35-15-14 Rentie, A. Beale et al 11 .... dry
14-14-14 Colbert, J. E. Wallace 7 10
23-15-11 Kimble, Jennings Oil Co. 3 50
8-15-14 Asbury, Peterson & Darby 1 .. gas
12-14-12 Wigan, L. C. Shutt et al 1-A 20
2-14-14 Starr, E. A. Hutchinson 6 .... dry
14-14-14 Colbert, McKay et al 6 10
28-13-13 Stephens, A. G. Hazlett et al 2 gas
13-11-14 Kanard, B. Morgan 10 ..... gas
35-16-14 Harrison, Harsha & Delaney 1-A ..... gas
36-14-12 Prince, L. C. Wheeler et al 3 gas
13-14-14 Rentie, Elm Oil Co. 10 10
26-14-14 Flint, J. L. Selby 16 2
7-14-15 Rentie, C. F. Speary 1-A .... dry
21-14-15 Jefferson, Cakland Drlg. Co. 1 gas
15-15-12 Brown, C. E. Love et al 2 .. gas
12-13-11 Crawford, Jolly-Cgg Oil Co. 1 dry
22-13-15 Lowe, E. J. Lambert 2 ..... dry
14-14-14 Colbert, J. E. Wallace 8 12
33-13-13 Jones, A. G. Hazlett 5 ..... gas
14-11-13 Grayson, B. Morgan 2 ..... dry

Wells completed 23
Production 114
Dry 6
Gas 10
Gas production 46,250,000

OSAGE COUNTY

29-20-12 J. A. Kennedy 2 ..... dry
21-27- 6 The Prairie O. & G. Co. 2 1710
The Prairie O. & G. Co. 3 710
27-27- 6 The Texas Company 1 110
28-27- 6 Gypsy Oil Co. 9 90
2-26- 6 Lewis Production Co. 6 192
2-25-11 I. T. I. Oil Co. 345 ..... gas
26-25- 9 Peters Pet. Co. 3 1830
20-27- 6 The Prairie O. & G. Co. 8 .. 75
22-24- 8 Delmar Oil Co. 1 15
21-23- 9 C. B. Peters 1 ..... dry
24-21-10 Gardner et al Co. 1 ..... dry
6-21- 9 A. D. McDonnell 2 ..... dry
5-20-11 Sand Springs Home 8 ..... dry
17-27- 6 Peters Pe.. Co. 10 158
28-27- 6 Kewanee O. & G. Co. 91 660
7-26- 6 Carter Oil Co. 8 170
13-26-10 I. T. I. Oil Co. 388 ..... dry
11-21- 6 The Prairie O. & G. Co. 1 10
21-27- 6 The Prairie C. & G. Co. 4 500
3-26- 6 Kewanee C. & G. Co. 11 250
Kewanee O. & G. Co. 12 83
22-24- 7 Kay County Gas Co. 2 1736
9-23- 7 Kay County Gas Co. 3 1113
18-22- 8 Devonian Oil Co. 1 ..... dry
32-21-11 Beacon Oil Co. 1 ..... dry
35-29-10 L. C. Duffield 4 7
17-27- 6 Phillips Pet. Co. 8 600
Phillips Pet. Co. 9 300
34-27- 6 Kewanee O. & G. Co. 12 12
21-27- 6 The Prairie O. & G. Co. 5 755

Wells completed 31
Production 11,163
Dry 7
Gas 1
Gas production 750,000

PONTOTOC COUNTY

9-5-8 Yoakum, C. B. Shaffer 7 25
16-5-8 Yoakum, C. B. Shaffer 6 350
17-5-8 McFiroy, Louisiana O. R. Corp. 6 dry
19-5-8 Wade, Max Westheimer 1 317
20-5-8 P. Harjo, W. R. Ramsey 3 ..... dry
10-4-4 Lowrance, Marland Oil Co. 1 .. dry
17-5-6 McDaniels, Sinclair O. & G. Co. 1 dry
7-3-7 Walton, Lewis & Clark 1 ..... dry
12-5-4 Fleming, Gillespie et al 1 25
2-4-7 Mathews, Ada Cement Co. 1 120
20-5-8 Perry, Louisana O. R. Corp. 10 gas
19-5-8 Berry, Homaokla Oil Co. 2 10
17-5-8 Rowe, Winkler & McQueen 1 .. dry
McCall, Homaokla Oil Co. 9 200
25-5-6 Patterson, Gillette & Krueger 2 gas
28-5-5 Copeland, La Salle et al 3 60
27-5-8 McCall, Tidal Oil Co. 6 ..... dry
McCall, Tidal Oil Co. 6 ..... dry
8-5-8 Milliner, Westheimer & Daube 2-A 8
27-5-6 Brown, American O. & R. Co. 1 gas
15-5-8 Gilmore, Snowden & McSweeney 1 ..... dry
19-5-8 Berry, Homaokla Oil Co. 3 ..... gas
8-5-8 Milliner, Westheimer & Daube 1 310
17-5-8 McCall, Homaokla Oil Co. 8 ..... dry
35-4-6 Rayborn, Bowles et al 1 ..... dry
15-4-7 Gann, W. C. Hughes et al 1 ..... gas

Wells completed 26
Production 1425
Dry 11
Gas 5
Gas production 40,000,000

POTTAWATOMIE COUNTY

14-7-4 Kelly, Independent O. & G. Co. et al 1 ..... dry
15-7-4 Robbins, Magnolia Pet. Corp. 2 ..4400
19-7-4 Neghnguit, Continental Oil Co. 3 485
Shipman, Magnolia Pet. Corp. 1. 347
23-7-4 McGee, Gypsy Oil Co. 2 1897
25-7-4 Smith, McCulloch Oil Co. 1 2007
36-7-3 School Land No. 74, Magnolia Corp. 1 7
15-7-4 Mull, Magnolia Pet. Corp. 1 133
19-7-4 Neghnguit, Continental Oil Co. 4. 205
20-7-4 Sanders, Pierce Oil Corp. 1 100

Wells completed 10
Production 9621
Dry 1

SEMINOLE COUNTY

34-10-6 Harjoche, Empire O. & R. Co. 1 gas
4- 9-6 Jeming, Twin State O l Co. 3.. dry
3- 9-8 Porter, Blackwell O. & G. Co. 1 gas
14- 8-6 Reed, The Texas Company 14. dry
35- 8-6 Pattey, Magnolia Pet. Corp. 3.. 400
36- 8-6 Fish, Carter Oil Co. 8 70
13- 7-6 Tiger, Snowden & McSweeney 1 3657
23- 7-6 Hotulke, Independent O. & G. Co. 1 6500
36- 6-7 Harris, Gardner et al 1 ..... dry
14- 5-7 J. Harjo, Mid-Continent Pet. Corp. 1 ..... gas
8- 5-8 Puniuste, Louisiana O. R. Corp. 2 180
12- 8-6 Templeton, Prairie O. & G. Co. 8 1100
12- 8-6 Reed, The Texas Company 1 .. dry
13- 8-6 Grayson, Atlantic O. P. Co. 2 .. 100
25- 8-6 Chilcoat, Prairie O. & G. Co. 1.1050
35- 8-6 Hull, Pure Oil Co. 2 ..... dry
13- 5-5 Isaacs, Shaffer O. & R. Co. 1.. dry
2- 7-6 Davis, Independent and White Face 3 910
36- 8-6 Cosar, Continental Oil Co. 4.. 600
32- 7-7 Marshal, I. T. I. Oil Co. 1 .... dry
15- 9-7 Jonah, Pure Oil Co. 1 ..... dry
2- 9-5 Sango, Sinclair O. & R. Co. 3..1210
26- 8-6 Hoyecha, W. B. Pine 1 1090
2- 7-6 House "B," I. T. I. Oil Co. 4..1221
12- 6-6 Goebelt, T. B. Slick 1 ..... dry
7- 5-8 Fleet, Mid-Continent Pet. Corp. 8 ..... gas
18- 5-8 Culley, W. R. Ramsey 2 787
1- 9-5 Clark, Shaffer O. & R. Co. 7.. 197
2- 9-5 Anderson, The Texas Company 8 495
12- 9-5 Barker, Twin State Oil Co. 6.. dry
13- 9-5 Hyde, Magnolia Pet. Corp. 1. 2085
9- 8-6 Mecco, Carter Oil Co. 1 140
9- 8-6 Jones, Sinclair O. & G. Co. 5.. 75
10- 8-6 Harjoche, Tidal Oil Co. 3 ..... dry
15- 8-8 Sowell, Crosbie et al 2 ..... dry
18- 6-8 Phillips, Carter Oil Co. 1..... 85
7- 5-8 Fleet, Mid-Continent Pet. Corp. 3 75
Fleet, Mid-Continent Pet. Corp. 9 750
8- 5-8 Hyde, The Texas Company 1.. 513
Hyde, The Texas Company 2.. 100
5- 9-6 Varnum, Prairie O. & G. Co. 1. 30
34- 8-6 Aldridge "A," Prairie O. & G. Co. 3 ..... dry

Wells completed 42
Production 23,424
Dry 13
Gas 4
Gas production 47,500,000

STEPHENS COUNTY

31- 1-8w Malechi, Smith-Law Co. 1 200
32- 1-8w Morgan, Carter Oil Co. 2 .... dry
20-1s-8w D. Bartley, Magnolia Pet. Corp. 9 16
27-1s-8w Wilkinson, Pearce & Brown 8.. 25
34-1s-8w Malernee, Snodgress Oil Co. 4. 70
36-1s-5w Marris, Magnolia et, Corp. 5. dry
4-2s-8w Burke, Turman Oil Co. 1 ..... dry
13-1s-4w Davidson, Clark & Cowden 1.. 140
G. Martin, Magnolia Pet. Corp. 3 1205
3-2s-8w Allen, George Pace 2 50
Allen, George Pace 3 ..... dry
13-2s-8w Dierkes, Beard & Cobb 1 .... dry
12-1s-4w Crews, Wirt Franklin Pet. Corp. 1 ..... dry
23-1s-4w Morton, Magnolia Pet. Corp. 1. dry
12-2 -8w Wilson, Pace et al 1 200
7-2s-7w Brown, American Pipe Line Co. 1 230
34-1s-8w Malernee, Snodgrass Oil Co. 5. 125
19- 1-8w Maxey Brannon & Fisher 1 .... dry
21-1s-8w Callahan, Fisher & Rankin 1.. dry
33-1s-8w Glass, Carter Oil Co. 8 ..... dry
34-1s-8w Burk, Medlin et al 2 150
23-1s-5w Spears, Mudge Oil Co. 6 ..... dry
12-2s-8w Fobb, Wirt Franklin Oil Corp. 1 170
12-1s-4w Perkins, Wirt Franklin Pet. Corp. 1 ..... gas
Brit.ain, Wirt Franklin Pet. Corp. 4 450
24-1s-4w Apple Franklin, Wirt Franklin et. Corp. 7 950
23-1s-5w Spears, Mudge Oil Co. 7 4
19-2 -7w Brown, Scott & Arlington 1 .... gas
13-1s-4w Kreb s, Skelly Oil Co. 6 686
Sh elds, Schermerhorn et al 3. 390
11-1s-4w Russell, Schermerhorn et al 1.. dry

Wells completed 32
Production 5072
Dry 12
Gas 2
Gas production 67,500,000

TULSA COUNTY

15-19-11 Riverbed, Glidden Oil Corp. 2. gas
36-19-11 Johnson, Unger et al 4 ..... dry
25-18-14 Island, Ellen O. & G. Co. 3.... 30
23-19-11 Unallotted, Sand Springs Home 2 100

21-19-12 Perry, E. D. Davis 2-A ..... dry
3-16-12 Sanderson, S. W. Anthony 9.. gas
12-16-12 Self, Devonian Oil Co. 1 ..... dry
5-16-13 Barthoff, Thompson & Black 4. 75
10-19-11 Hodge, Caldwell & Page 1 .... dry
24-18-13 Boone, Mid-Co Oil Co. 1 10
24-18-14 Island, J. F. McGuigan 2 35
15-19-11 Riverbed, Glidden Oil Corp. 3. 20
20-19-10 Cooke, Holmes et al 1 ..... dry
15-19-11 Jones, Glidden Oil Corp. 2... 30
15-18-12 Stanwaite, Short & Maness 1-A dry
30-22-14 Allen, J. H. Middleton 1 ..... dry
35-21-13 Halsell, Halsell & Son O. & G. Co. 1 ..... gas
25-21-12 Walker, Campbell O'l Co. 9 .... gas

Wells completed 18
Production 300
Dry 7
Gas 4
Gas production 3,004,500

WAGONER COUNTY

11-19-15 Lynch, J. R. Winters 2 ..... dry
29-18-16 Scales, Iron Mtn. Oil Co. 4.... dry
8-18-18 Jameson, Keener O. & G. Co. 1. dry
21-19-16 Island, Robinson et al 1 ..... dry
7-18-15 Pressley, Boyd & Hanks 3..... dry
Pressley, Boyd & Hanks 4..... 5
30-17-18 Cane, J. H. Scriba 4 ..... dry

Wells completed 7
Production 5
Dry 6

MISCELLANEOUS COUNTIES
Cimarron County—
23-5-2ecm State, Sinclair O. & G. Co. 1. dry
Caddo County—
22-6-10w Jacobs, English Drlg. Co. 1 ... dry
31-6n-9w Gafney, English Drlg. Co. 3 ... 30
5- 5-9w McKenna, Caddo Oil Co. 1 35
13- 4-8w Parks, Commerce Dev. Co. 1 .. gas
Texas County—
17-3-5ecm Bar Bee, Texas County Gas 1 gas
Garfield County—
15-23-5w Barnes, Oil States Pet. Co. 1.. dry
Pittsburgh County—
21- 7-17 Yoho, Quinton Speiter Co. 1 .... gas
Beckham County—
30-9-23w Traves, Cal Wright 1 ..... dry
Cotton County—
3-2n-10w Priddy, Collum et al 1 40
17-5-14w Patton, Gould et al 1 ..... dry
Lincoln County—
31-17-5 Skinner, Shaffer O. & R. Co. 3. 765
15-15-5 Skeets, Wilcox O. & G. Co. 1.. gas
31-17-5 Long, T. P. C. & O. Co. 2 160
Payne County—
10-18-5 Jennings, Magnolia Pet. Corp. 1 ..... gas
10-18-5 Powers, Transcontinental Oil Co. 1 ..... gas
7-18-4 Ramsey, Pure Oil Co. 2 ..... dry
Pawnee County—
30-20-9 Est., J. A. Turner et al 1 ... 21
4-20-7 Miller, Privett Drlg. Co. 1 ... dry
Hughes County—
8- 5-8 Bingham, I. T. I. Oil Co. 1 ... 237
Harris, T. B. Slick 1 45
Jefferson County—
24-6s-6w Springer, Heydrick et al 1 230
16-7s-5w Black, E. T. Daniels 1 25
20-7s-5w Pfile, Sigler & McGinley 1 40
Logan County—
11-18-4w Hall, Welch, Acton & Brown 1 dry
Bryan County—
26-5s-7 Marshall, Magnolia Pet. Corp. 2 dry
Garvin County—
31- 1-3w King, Magnolia Pet. Corp. 1-A. 85
Sequoyah County—
33-12-27 Humphrey, Citizens Gas Co. 1.. gas
Logan County—
28-18-4w Knecht, Sinclair O. & G. Co. 1. 490
Sole, Blackwell O. & G. Co. 1. 136
11-18-4w Hall, Welch, Acton & Brown 1. dry
Washington County—
8-26-13 Measles, Dave Maxwell et al 1. dry
18-25-14 Fee, Amos & Grindle 1 10
Rogers County—
9-21-17 Wilson, Weber, Qualls & Edington 2 ..... gas
Williams, Mrs. Lee T. Ross et al 3 ..... dry
Williams, Weber, Thompson et al 4 40
Wilson, Weber, Qualls & Edington 2 ..... gas
10-21-16 Dicycer, Leon Riggs 1 ..... dry
23-22-16 Brown, Whiteside et al 1 ... dry
9-21-17 Wilson Bros., Weber & Edington 3 70
Williams, Mrs. Lee E. Ross et al 4 140
Nowata County—
4-25-17 Olive, A. C., & Ben Frieden 3.. 5

Wells completed 42
Production 2604
Dry 14
Gas 9
Gas production 58,250,000

KANSAS FIELDS

Summary of Wells Completed

County—	Comp.	Prod.	Dry	Gas
Butler	3	245	1	0
Chautauqua and Elk...	16	65	7	1
Cowley	15	160	8	5
Greenwood	24	1,715	8	1
Marion	11	725	7	0
Sumner	25	15,463	3	1
Miscellaneous	28	461	11	0
Total April	116	18,834	45	8
Total March	115	13,191	36	16
Difference	1	5,643	9	8

Summary of Rigs and Wells Drilling

County—	Rigs	Drlg.	Ttl.
Butler	7	15	22
Cowley	5	23	28
Elk	1	13	14
Greenwood	12	22	34
Marion	6	19	25
Russell	2	15	17
Sumner	10	32	42
Woodson	1	9	10
Miscellaneous	16	59	75
Total April	60	207	267
Total March	68	195	263
Difference	8	12	4

WELLS COMPLETED
BUTLER COUNTY

6-27-6 Sluss, Gaiden et al 1 200
8-27-6 Brissie, Richmond Drlg. Co. 2. 45
26-27-5 Bryson, Cress, Frank et al 1 ... dry

Wells completed 3
Production 245
Dry 1

CHAUTAUQUA AND ELK COUNTIES

1-32-10 Chaffine, Griffin, Bell et al 1 gas
33-33-12 Macham, Jas. O'Neil-Bruen 1.. dry
Meacham, Jas. O'Neil-Bruen 2 dry
33-32- 9 Payne, Manhattan Oil 1 ..... dry
21-29-12 Miller, La Dow et al 1 ..... dry
23-30-10 Mills, Phoenix Oil 4 35
25-30-10 Silger, Truby et al 1 30
36-30-10 Faulk, Pennock Oil 1 ..... dry
21-30-11 Flack, Harvey et al 1 ..... dry
14-31-10 Webb, Union Gas Corp. 23 .... dry

Wells completed 10
Production 65
Dry 7
Gas 1
Gas production 2,000,000

COWLEY COUNTY

30-31-3 Fry, Parker Drlg. Co. 1 ..... dry
14-31-4 King, Trees Oil Co. 1 ..... dry
21-31-4 Hittle, The Texas Co. 3 135
22-32-4 Wallace, McNabb et al 2 ..... gas
5-32-5 Beck, Lewis Prod. Co. 1 ..... dry
31-33-4 Wagner, Roth & Faurot 1 ..... dry
31-34-3 Mullett, Shawver et al 1 ..... dry
17-31-5 Elliott, Elliott et al 1 ..... gas
22-32-4 Dibbons, Slick et al 3 ..... gas
4-31-5 Elliott, Tatlock et al 1 ..... dry
22-32-4 Mattison, Knox Drlg. Co. 1 ... gas
19-31-3 Stout, Durham & Work 1 ..... dry
18-31-4 Perkins, Roth & Faurot 1 ..... dry
30-31-6 Pearce, Lewis Prod. Co. 1 25
12-32-6 Estus, Trees O.l 1 ..... gas

Wells completed 15
Production 160
Dry 8
Gas 5
Gas production 10,500,000

GREENWOOD COUNTY

30-22-13 Schwab "B" Empire O. & R. 4 100
Schwab, Tidal Oil 2 80
8-25-13 Johnson, Empire O. & R. 1.... dry
30-22-13 Schwab, Tidal Oil 1 ..... dry
Schwab, Tidal Oil 3 100
2-23-12 Fankhouser, Trans. Oil Co. 1 dry
36-24-12 Hoover, Cross et al 3 ..... dry
5-25-13 Hoggins, Mendenhall et al 1.. gas
10-25-13 Roglin, Valley Osage Oil 3 ... dry
23-22-12 Fankhouser, Theta Oil 7 100
30-22-13 Schwab "B", Empire O. & R. 2 90
Schwab "B", Empire O. & R. 3 100
Schwab, Simmons & Rhodes 2 25
33-22-13 Lue, Skelly Oil 1 30
6-25- 9 Olson, Murphy et al 2 150
10-25-13 Roglin, McCullough Oil 2 ..... dry
1-26-10 Stanley, Stark et al 1 ..... dry
7-27-11 Grundy, Mohawk Oil 2 150

Wells completed 24
Production 1715
Dry 8
Gas 1
Gas production 1,000,000

MARION COUNTY

23-17-4 Peterson, Phillips Pet. 2 175
22-17-4 McCoy, Phillips Pet. 2 ..... dry
Reznicek, Phillips Pet. 3 ..... dry
31-18-5 Benthe, Banderson et al 1.. dry
15-17-4 Boisington, Loomis et al 1 200
20-18-4 Melcher, Skow et al 1 ..... dry
14-17-4 Weston, Crawford et al 1 ..... dry
23-17-4 Folks, Braden, McClure et al 1 dry
1-21-1 Lehrman, Sunray Oil et al 1. dry
22-17-4 Zinn, Reynolds et al 1 200
23-17-4 Peterson, Phillips Pet. 4 150

Wells completed 11
Production 725
Dry 7

SUMNER COUNTY

14-32-2 Gassoway, Wasson et al 7..... 1100
22-32-2 Veail, McNabb & Boss 1..... dry
24-31-2 Shore, Vickers Pet. 4 ..... dry
25-31-2 Sleigh, Roxana Pet. 4..... 200
Riverbed, Roxana Pet. 5 10
36-31-2 Taton, Roxana Pet. 5..... 600
11-32-2 Work, Roxana Pet. 1 12
Community, Roxana Pet. 10 10
14-32-2 Burkett, Derby Oil 3 170
Scroggins, Jarvis & Stanley 2.. 120
Fritz, Roxana Pet. 3 500
Barnes, Roxana Pet. 2 2950
Emerich, Roxana Pet. 11..... 65
Emerich, Roxana Pet. 12..... 220
23-32-2 Weinrich, Palmer and Barnsdall Oil 3 1580
8-35-1 Bowers, Meridian Gas 1 ..... gas
14-32-2 Barnes, Roxana Pet. 1 390
23-32-2 Weinrich, Palmer and Barnsdall Oil 5 975
Weinrich, Palmer and Barnsdall Oil 7 900
14-32-2 Barnes, Roxana Pet. 3 2100
Gassoway, Wasson et al 8..... 950
23-32-2 Weinrich, Palmer and Barnsdall Oil 4 1500
14-32-2 Townsite, Noble et al 1..... dry
Rothwell, Roxana Pet. 3..... 750
22-31-2 Caldwell, Ramsey et al 1..... 400

Wells completed 25
production 15,463
Dry 3
Gas 1
Gas production 1,250,000

MISCELLANEOUS COUNTIES
Russell County—
5-14 15w Mermis, Midwest Explin. 4.. 125
Ellis County—
26-12-16w Meiker, Tatlock et al 1..... dry
Lyon County—
36-21-11 Fiede, Basom et al 1..... dry
Marshall County—
4-4-7 Finn, Marshall Oil Synd. 1..... dry
Morris County—
6-16-8 Stuart, Fisher & Lauck 1..... dry
30-17-5 Nelson, Graham et al 1..... 30
Allen County—
33-24-21 Johnson, O.K.O. O. & G. Co. 30. 6
Bourbon County—
24-24-21 Dawson, Harris et al 2..... dry
23-24-21 Thompson, Harris et al 3..... dry
Montgomery County—
20-34-17 Fee, J. P. Burns, Tr. 3..... 15
Fee, J. P. Burns, Tr. 4..... 10
2-34-13 Brocsk, Ewers & Clements 1.. 35
17-33-15 Bryan, Henderson Oil 7..... 5
13-33-14 Stocker, Central Oil 2 50
2-34-17 Partridge, H. C. Ewers 4 2
Anderson County—
13-21-20 Ewing, American Cont. Oil 39 42
Ewing, American Cont. Oil 40 5
4-21-21 Rosell, M. P. Colt 17..... 30
Ross, Schermerhorn Oil 1.. 9
Ross, Schermerhorn Oil 2.. 20
Croan, Schermerhorn Oil 1.. dry
Croan, Schermerhorn Oil 2 dry
16-20-21 Johnson, Kansas City Fuel 1. 27
Linn County—
21-21-23 Otto, Frank Young 1..... 15
Wilson County—
10-28-14 Blank, Scott et al 1..... 35
Woodson County—
8-24-15 Rudd, Fees et al 1 ..... dry
4-24-16 Tannerhill, Fees et al 1... dry
8-24-17 Morgan, Southern Kans. Gas 1 dry

Wells completed 28
Production 461
Dry 11

EAST CENTRAL TEXAS

Summary of Field Operations

County—	Comp.	Prod.	Dry	Gas	Rig	Drg.	Ttl.
Anderson	1	0	1	0	0	1	1
Camp	0	0	0	0	0	1	1
Cherokee	0	0	0	0	0	1	1
Falls	0	0	0	0	0	1	1
Henderson	0	0	0	0	0	1	1
Limestone	4	0	4	0	0	4	4
Navarro	1	0	1	0	0	1	1
Smith	1	0	1	0	0	1	1
Total April	7	0	7	0	0	11	11
Total Mar.	5	125	4	0	0	8	8
Difference	2	125	3	0	0	3	3

WELLS COMPLETED
SMITH COUNTY

Lassiter, Humble O.l & Ref. 1 ..... salt

NAVARRO COUNTY

Boyd, Wheelock et al 1 ..... dry

LIMESTONE COUNTY

Fenner, Dillon & Hammond 1 ..... dry
Boyd, Wheelock et al 1 ..... dry
Williams, Harrison et al 1 ..... dry
Pruitt, Humble Oil & Ref. Co. 1 ..... abd

ANDERSON COUNTY

Jones, Humble Oil & Ref. Co. 1 ..... dry

GULF COAST FIELDS

Summary of Field Operations for April

	Comp.	Prod.	Dry	Gas	Rigs	Drg.	Ttl.
Barbers Hill	1	40	0	0	0	3	3
Batson	2	205	0	0	1	2	3
Big Creek	3	300	2	0	1	2	3
Blue Ridge	10	6,825	1	0	4	7	11
Boling	22	974	17	0	*5	8	13
Damon	1	45	0	0	0	2	2
Edgerly, La.	1	5	0	0	1	6	7
Goose Crk.	1	108	1	0	0	4	4
Hackb'y, La.	4	1,450	2	0	0	5	5
High Island	1	250	0	0	1	3	4
Hull	6	2,470	1	1	0	3	4
Jennings, La.	1	313	1	0	2	4	6
Lockp'rt, La.	1	308	0	0	3	7	10
Markham	1	0	1	0	0	0	0
Nash	3	1,325	1	0	0	2	2
Orange	5	934	2	0	0	9	9
Orchard	0	0	0	0	0	1	1
Pierce Jct.	9	8,750	2	0	3	14	17
Saratoga	0	0	0	0	0	3	3
Sour Lake	3	560	0	0	1	2	3
S. Liberty	6	460	2	0	1	10	11
Spindletop	16	6,584	5	0	1	12	13
Starks	0	0	0	0	0	1	1
Sulphur	2	2,600	0	0	1	1	2
Vinton	1	75	0	0	1	3	4
W. Columbia	1	320	0	0	1	1	2
Miscellaneous	22	1,733	17	1	9	31	40
Ttl. Apr.	127	36,624	55	2	36	150	186
Ttl. Mar.	124	44,287	41	1	30	165	195
Difference	2	7,653	14	1	6	15	9

*Does not include number of shallow sulphur tests.

WELLS COMPLETED
BATSON—HARDIN COUNTY

Hodges, Capitol Oil Co. 10..... 200
King, J. R. Everett 3..... 5

Wells completed 2
Production 205

BARBERS HILL—CHAMBERS COUNTY

Fisher, R. U. Bartlett 1 40

BIG CREEK-FORT BEND COUNTY

*T. W. Davis, Gulf Production Co. 39.. dry
T. W. Davis, Gulf Production Co. 45.. 300
Wheat, The Texas Company 3..... dry

Wells completed..... 3
Production 300
Dry 2

BLUE RIDGE—FORT BEND COUNTY

*Blakely, (Bassett), Blakely & Means 1 dry
*Blakely, Cunningham Production Co. 1 175
Lafferty, H. R. Cullen et al. 2..... 700
*Blakely, Fort Bend Oil Co. 2-A..... 100
*Blakely, Fort Bend Oil Co. 2-B..... 200
Blakely, Fort Bend Oil Co. 3-C 100
*Blakely, Gordon & Sharp, 2-C..... 1830
Luscher, Gulf Production Co. 12..... 1520
Overly, H. G. Nelms, 1..... 200
Scott, Watts Brothers Oil Co. 1..... 2000

Wells completed 10
Production 6825
Dry 1

BOLING—FORT BEND AND WHARTON

Waytek, Benson & Abercrombie 5.... dry
Abendroth (W. T.) Gulf Production Co. 1 250
Abendroth (R. R.) Gulf Production Co. 3 430
Rav. Patterson et al 3..... dry
E. C. Farmer, Sun Oil Co. 1 ..... dry
Chase E. M., Texas Gulf Sulphur Co. 8 dry
Chase E. M., Texas Gulf Sulphur Co. 9 dry
Coulter J. L., Texas Gulf Sulphur Co. 1 dry
Farmer (H. R.), Texas Gulf Sulphur Co. 1..... dry
Farmer (J. R.), Texas Gulf Sulphur Co. 6..... dry
Farmer (J. R.), Texas Gulf Sulphur Co. 7..... dry
Farmer (H. R.), Texas Gulf Sulphur Co. 1 ..... dry
Kosterlink, F., Texas Gulf Sulphur Co. 2 ..... dry
Sitta P., Texas Gulf Sulphur Co. 1.... dry
Urkert, C. J., Texas Gulf Sulphur Co. 2 dry
Looper W. T., Union Sulphur Co. 1.... dry
Bay, J. C., Weed-Gayle Oil Co. 14-A dry
Bay, J. C., Weed-Gayle Oil Co. 15-A dry
Bay, J. C., Weed-Gayle Oil Co. 16-A.. dry
Feltz, Joe, Weed-Gayle Oil Co. 18..... dry
Feltz, Joe, Weed-Gayle Oil Co. 19..... 144
Keller, W. H., Weed-Gayle Oil Co. 19 150

Wells completed 22
Production 9774
Dry 18

DAMON MOUND—BRAZORIA COUNTY

Masterson, Sinclair Oil & Gas Co. 22.. 45

EDGERLY—CALCASIEU PARISH

Hunter, Rex Petroleum Co. 8 5

GOOSE CREEK—HARRIS COUNTY

*Hoffman-Gaillard, Gulf Production Co. 19 ..... dry
*Gaillard, Humble Oil & Refining Co. 51 100
*Trader, W. C. Turnbow 6..... 8

Wells completed 3
Production 108
Dry 1

HACKBERRY—CAMERON PARISH

*Caldwell-Calcasieu Oil Co. 2..... 250
Cadlwell, Calcasieu Oil Co. 3..... 1200
Dorlon, Calcasieu Oil Co. 1..... dry
School Land, Yount Lee Oil Co. 7..... dry

Wells completed 4
Production 1450
Dry 2

HULL—LIBERTY COUNTY

Baumgraver, Empire Oil & Gas Co. 28 832
*Phoenix, Gulf Production Co. 47..... 1128
Phoenix, Gulf Production Co. 90..... 500
*Mecom (Taylor) Mecom Oil Co. 4..... 10
*Dolbear, Republic Production Co. 73 dry
Hannah, The Texas Company and Vacuum Oil Co. 7..... gas

Wells completed 6
Production 2470
Dry 1
Gas 1
Gas Production 10,000,000

HIGH ISLAND—GALVESTON COUNTY

*Geo. E. Smith, Gulf Production Co. 2-A 250

JENNINGS—ACADIA PARISH

*Fee, Ashler-Bolyard 1..... 58
*Arnandet, E. L. Myers 2..... 10
*Jennings-Heywood, Port City Oil Co 5 140
*Jennings-Heywood, Port City Oil Co. 8 105
Crowley Oil & Min. Co., Yount Lee Oil Co. 1 ..... dry

Wells completed 5
Production 313
Dry 1

LIBERTY—LIBERTY COUNTY

Lacour, Abercrombie & Harrison 2.... dry
*Pickett, Bashara Oil Co. 5..... 10
Ashler, Sun OilCo. 2..... 250
Mitchell, Sun Oil Co. 2..... 200
Green, The Texas Company 2..... dry
Green, The Texas Company 3..... dry

Wells completed 6
Production 460
Dry 2

LOCKPORT—CALCASIEU PARISH

Bordages, Vacuum Oil Co.-Gulf Refining Co. 6 308

MARKHAM—MATAGORDA COUNTY

Hudson, Rycade Oil Corp. & Humble Oil Refining Co. ..... dry

NASH—FORT BEND COUNTY

Nash, Rycade Oil Corp. 3..... dry
*Wisdom, Rycade Oil Corp. 16..... 525
Wisdom, Rycade Oil Corp. 23..... 800

Wells completed 3
Production 1325
Dry 1

ORANGE—ORANGE COUNTY

*Chessom, Gulf Production Co. 6..... 900
*Carbello, Rex Petroleum Co. 6..... 28
*State, Rycade Oil Corp. 13-E..... dry
*Brown, Sun Oil Co. 2..... 6
*Winfree, Orange Petroleum Co. 3..... dry

Wells completed 5
Production 934
Dry 2

PIERCE JUNCTION—HARRIS COUNTY

Whitehead, Anderson & Plummer 2..2500
Fee, (Jones) Bashara Brothers, 2 900
*Saunders, Gulf Production Co. 1..... dry
Cooper, Moody Corp. 1..... 2500
G. H. & S. A., Rio Bravo Oil Co. 101.. dry
*Fee, Rio Bravo Oil Co. 1..... 950
*Settegast, Rio Bravo Oil Co., 3-B.... 300
Settegast, Rio Bravo Oil Co., 8-B.... 100
Fitzsimmons, T. G. Shaw 2..... 1500

Wells completed 9
Production 8750
Dry 2

SOUR LAKE—HARDIN COUNTY

H. A. Thompson et al, Gulf Production Co. 3 150
Fee, Minor Oil Co. 83..... 10
*Merchant, Thies Oil Co. 3..... 400

Wells completed 3
Production 560

SPINDLETOP—JEFFERSON COUNTY

Peeler, Rattlesnake Oil Co. (Hines) 3.. dry
Weed, Gulf Production Co. 13-A..... 145
*Jack Duff, Gulf Production Co. 8.. 150
*T. & N. O., Rio Bravo Oil Co. 54..... 25
McLean, Sun Oil Co. 20 ..... dry
*Gladys City, Yount Lee Oil Co. 24.... 60
Gladys City, Yount Lee Oil Co. 43..... dry
Gladys City, Yount Lee Oil Co. 54..... dry
Gladys City, Yount Lee Oil Co. 55.. 700
Gladys City, Yount Lee Oil Co. 56 .... dry
McFadden, Yount Lee Oil Co. 61..... 800
McFadden, Yount Lee Oil Co. 63..... 204
McFadden, Yount Lee Oil Co. 64.....1600
*Fee, Yount Lee Oil Co. 15..... 800
*Fee, Yount Lee Oil Co. 19..... 1900
*Fee, Yount Lee Oil Co. 20..... 1000

Wells completed 16
Production 6584
Dry 5

SULPHUR—CALCASIEU PARISH

Fee, Union Sulphur Co. 723..... 1800
Fee, Union Sulphur Co. 724..... 800

WEST COLUMBIA—BRAZORIA COUNTY

*Hogg The Texas Company 52..... 320

VINTON—CALCASIEU PARISH

Gray, Vinton Petroleum Co. 62..... 75

MISCELLANEOUS—TEXAS
Brazoria County—
Allen-Random, Roxana Petroleum Corp 1 26
Allen, Roxana Petroleum Corp. 4.... 702
Colorado County—
Auerback, E. M. Masterson 1..... dry
Fort Bend County—
L. Wolf, Gulf Production Co. 7..... dry
Wolf, Gulf Production Co. 8..... dry
Harris County—
Hockley-Texas-Warren, Humble Oil &

Refg. Co. 2 ..... dry
Hockley-Warren-Texas Exploration Co., Humble Oil & Refg. Company 3 ..... dry
Jackson County—
Edna-S. G. Drushel, Wright Brothers 7 ..... dry
Jasper County—
Boykin, Oscar Head, Trustee 1 ..... dry
Nona Mills Co. Tar Well Oil Co 1 ..... dry
Jefferson County—
McFaddin, Deep Test Oil Co. 1 ..... dry
Young, Spindletop Oil & Gas Co. 1 ..... dry
Waller County—
Fluckinger, Fluckinger et al 2 ..... dry

LOUISIANA

Ascension Parish—
United, Gulf Refining Co. 6 1000
Cameron Parish—
Watkins, Roxana Petroleum Corp. 1 .. dry
Iberia Parish—
Averys Island, La. Land & Exploration Co. 1 ..... dry
White Castle-Wilbert, Roxana Pet. Co. 1 ..... dry
Bernard, White et al 1 5
Bayou Desglais-Wilbert, Union Sulphur Co. 1 ..... dry
Jeff Davis Parish—
Welsh-LeDoux, Etropal Oil Co. 2 .... dry
Terrebonne Parish—
Southdown, Southern Gas Co. 4 ..... gas
Southdown, Southern Gas Co. 5 ..... dry

Wells completed 22
Production 1733
Dry 17
Gas 1
Gas production 25,000,000

*Old wells deepened.

SOUTHWEST TEXAS

Summary of Field Operations

	Comp.	Prod.	Dry	Gas	Rigs	Drg.	Ttl.
Mirando	20	195	9	5	10	24	34
Luling	4	200			0	3	3
Dale	4	395			0	1	1
Kingsville	3		1	2	2	1	3
Refugio	6		0	6	1	6	7
Somerset	3	18			3	1	4
Adams					0	1	1
White Point			1	0	3	6	9
Miscellaneous	15	50	12	1	17	85	102
Ttl. Apr.	55	858	23	14	36	128	164
Ttl. Mar.	30	707	19	4	27	118	145
Difference	25	151	4	10	9	10	19

WELLS COMPLETED
COLE FIELD—DUVAL
Magnolia Petroleum 3-S ..... gas
Magnolia Petroleum 2-S ..... gas
Magnolia Petroleum 4-S ..... gas
HUMBLE-REITER-FOSTER
Humble Oil & Ref. 7 10
RANDADO—JIM HOGG
Moody Corp. 13 30
Magnolia Petroleum 37 ..... abd
Lightfoot and others 1 ..... abd
Moody Corp. 14 60
Frank Koury 1 5
ALWORTH FIELD
Alworth-Stevens-Hild 11 ..... abd
STARR COUNTY
Deckle & McCarley ..... abd
Clark-Woodruff 1 ..... abd
J. E. Harston 1 ..... abd
The Texas Company A-1 ..... gas
Commonwealth Oil ..... abd
COLE FIELD—WEBB
Cole Petroleum 54 (gas) 30
Cole Petroleum 55 60
ALBERCAS FIELD
Newton Drilling 1 ..... abd
WILDCATS
Schott-Tafel 1 ..... abd
ZAPATA COUNTY
Wm. R. Jewell 1 ..... abd

Wells completed 20
Gassers completed 5
Abandoned tests 9
Oil production 195
Gas production 81,750,000

LULING FIELD
M. K. Koenig Tiller 6 100
Magnolia Petroleum Mercer 8 30
Magnolia Petroleum Rios 20 20
Pat M. Armstrong Hardeman 1 50

Wells completed 4
Oil wells completed 4
Oil production 200
DALE FIELD
Texas Company Osteen 4 75
Sun Oil Talley 4 170
Texas Company Osteen 5 75
Texas Company Moore 1 75

Wells completed 4
Oil wells completed 4
Oil production 395
KINGSVILLE FIELD
Humble Oil & Ref. Kleberg 5 ..... gas
Humble Oil & Ref. Flato 3 ..... gas
Humble Oil & Ref. Kleberg 6 ..... abd

Wells completed 3
Dry and abandoned 1
Gassers completed 2
Gas production 70,000,000
REFUGIO GAS FIELD
Houston Oil Co. Heard 11 ..... gas
Houston Gulf Gas Shelly 2 ..... gas
Houston Gulf Gas Vance 1 ..... gas
Houston Oil Co. Rook 6 ..... gas
Houston Oil Co. Heard 6 ..... gas
Houston Oil Co., Rook 1 ..... gas

Wells completed 6
Dry and abandoned 0
Gassers completed 6
Gas production 180,000,000
SOMERSET FIELD
Schimmel Pet. Corp. Ginter 4 6
Schimmel Pet. Corp. Ginter 6 6
N. A. Saigh Fress 5 6

Wells completed 3
Oil wells completed 3
Oil production 18
WHITE POINT FIELD
Saxet Oil Co. Bennett 1 ..... abd
MISCELLANEOUS
Caldwell County—
Joe Bruner-Wilson 1 42
O. W. Killam Alexander 1 ..... abd
Edwards County—
Devil's River Oil Turney 2 ..... abd
Guadalupe County—
O. W. Killam Lynch 1 ..... abd
Gonzales County
W. D. Flynn Wilhausen 1 ..... abd
L. L. Jones Campbell 1 ..... abd
L. P. Unkel Johnson 3 ..... abd
Live Oak County—
Live Oak Gas, Frank Church 1 ..... gas
Houston Gulf Gas, Lark 2 ..... abd
J. A. Harper, Nichols 2 ..... abd
Medina County—
Yantis and others, Saathoff 1 ..... abd
R. P. O'Brien, Nixon 1 8
Pat M. Armstrong Mangold 1 ..... abd
Morgan-Walsh, Haby 1 ..... abd
McMullen County—
Houston Gulf Gas, Lark 1 ..... abd

Wells completed 15
Dry and abandoned 12
Gassers completed 1
Oil wells completed 2
Oil production 50
Gas production 4,000,000

TEXAS PANHANDLE FIELDS

Summary of Rigs and Wells Drilling

County—	Rigs	Drg.	S. D.	Ttl.
Carson	0	6	0	6
Gray	15	49	5	69
Hutchinson	8	15	8	31
Wheeler	6	5	3	14
Miscellaneous	10	13	21	44
Total April	39	88	37	164
Total March	34	95	41	170
Difference	5	7	4	6

Summary of Wells Completed

County—	Comp.	Prod.	Dry	Gas
Carson	2	0	0	2
Dallam	1	0	1	0
Gray	22	9,667	4	4
Hale	1	0	1	0
Hartley	1	0	1	0
Hemphill	1	0	1	0
Hutchinson	1	25	0	0
Oldham	1	0	1	0
Potter	2	0	1	1
Sherman	1	0	1	0
Wheeler	5	0	1	4
Total April	38	9,692	12	11
Total March	45	4,925	21	13
Difference	7	4,767	9	2

CARSON COUNTY
White Deer Inv. Co., Empire G. & F. 1 gas
N. A. Cobb, The Texas Co. 1 ..... gas

Completions 2
Gas production 63,000,000

DALLAM COUNTY
Capitol Synd., H. Skelly et al 1 ..... dry
GRAY COUNTY
W. Jackson, Danciger O. & R. et al 10 2157
E. J. Case, Empire G. & F. 1 ..... gas
A. Chapman, Ray & Massie 1 4320
M. Huselby, Rensaul Pet. Corp. 2 70
Worley & Reynolds, Sun Oil 2 20
McLarty-A, The Texas Co. 1 305
McLarty-B, The Texas Co. 1 20
J. B. Bowers, Gibson Oil Corp. 3 750
J. J. Wall, Magnolia Pet. 1 ..... gas
J. B. Bowers, Majestic Oil 4 405
J. K. Crews, St. Clair Oil 1 ..... dry
H. M. Davis, The Texas Co. 2 240
C. W. Bradford, Danciger O. & R. et al 1 ..... gas
A. Chapman, Danciger O. & R. et al 1. gas
S. S. Morse, McCauley et al 1 120
Chapman-B, The Texas Co. 2 250
W. Jackson, Danciger O. & R. et al 7. dry
J. S. Morse, Danciger O. & R. et al 1. 150
W. Jackson Operators Oil 2 800
Davidson-Myson, Phillips Pet. 1 ..... dry
J. B. Bowers, The Texas Co. 4 60
G. H. Saunders, Viola Oil 1 ..... dry

Completions 22
Production 9667
Gas production 75,000,000
Dry 4

OLDHAM COUNTY
Landergin, Prairie O. & G. 1 ..... dry
Canadian River Bed, El Rio Oil 1 ..... gas
W. H. Bush, F. Allen et al 1 ..... dry

Completions 2
Gas production 25,000,000
Dry 1

SHERMAN COUNTY
Lee Bivins, Gibson Oil Corp. 1 ..... dry
WHEELER COUNTY
E. L. Woodley, Sablens Oil Co. 1 ..... gas
C. C. George, Vaughn et al 1 ..... dry
C. George, Lone Star Gas 1 ..... gas
M. Ackley-B, Vaughn et al 1 ..... gas
J. D. Parcell, Clark et al 1 ..... gas

Completions 5
Gas production 93,200,000
Dry 1

HALE COUNTY
Crawford, Explts. Co. of Texas 1 ..... dry
HARTLEY COUNTY
Lyman & Balfour, Deep Rock Oil 1 ..... dry
HEMPHILL COUNTY
H. E. Hoover, Hoover et al 1 ..... dry
HUTCHINSON COUNTY
E. Cockrell-Ellis, Phillips Pet. 1 25

WEST TEXAS FIELDS

Summary of Wells Completed

County—	Comp.	Prod.	Dry	Gas
Brewster	1	0	1	0
Crane	4	457	2	0
Crockett	3	620	1	0
Concho	1	0	1	0
Fisher	1	165	0	0
Garza	1	0	1	0
Howard	5	200	0	0
Jones	3	220	0	0
Mitchell	1	0	1	0
Pecos	15	138,619	6	0
Reeves	1	0	1	0
Runnels	3	40	2	0
Reagan	4	470	3	0
Taylor	1	0	1	0
Tom Green	1	0	1	0
Winkler	27	86,849	1	0
Total April	71	227,670	21	0
Total March	93	285,981	28	3
Difference	27	58,311	7	3

WELLS COMPLETED
BREWSTER COUNTY
Turney, Mid Kansas Oil & Gas Co. 1... dry
CRANE COUNTY
J. R. Mosley, Crane Development Co. 1. dry
J. T. McElroy, Gulf Production Co. 48.. 160
M. M. Treanor, Lockhart and others 1.. dry
J. T. McElroy, Gulf Production Co. 49.. 327

Completions 4
Production 487
Dry 2

CROCKETT COUNTY
P. J. Sorg Estate, Humble O. & R. Co.. 596
P. C. Coates, V. T. Bolin & Co. 1 ..... dry
H. M. Halff, Grayburg Oil Co. 2 24

Completions 3
Production 620
Dry 1

CONCHO COUNTY
W. O. Schultz, Dutton & Hughes Drilling Co. 1 ..... dry
FISHER COUNTY
J. A. Young, Cranfill & Reynolds 1.. 165
GARZA COUNTY
E. P. Swenson and others-A, Gulf Production Co. 1 ..... dry
HOWARD COUNTY
Dora Roberts, Coyle-Concord Oil Co. 5. 60
A. J. Hooks, Godley Oil Co. 2 25
Dora Roberts, Tate, Weekley & Tubbs 3. 30
Dora Roberts-A, F. H. E. Oil Co. 3 75
Mary Chalk, Magnolia Petroleum Co. 10 10

Completions 5
Production 200

JONES COUNTY
Joe Winters, Phillips Petroleum Co. 5.. 102
E. Howell, Rhodes & Highers 1 118

Completions 2
Production 220
MITCHELL COUNTY
A. C. Mills, Paul Teas and others 1... dry
PECOS COUNTY
I. G. Yates-B, Mid-Kansas Oil & Gas Co. 22 21,696
J. H. Tippett, Skelly Oil Co. 1 456
Belgrade Ranch Co., Stidham & Thrashley ..... dry
I. G. Yates, Lease No. 1, California Co. 14 7721
I. G. Yates, Gulf Production Co. 1 180
Smith-Taylor, Mid-Kansas Oil & Gas Co. 13 20,208
Smith-Taylor, Mid-Kansas Oil & Gas Co. 14 8376
I. G. Yates, Lease 1, California Co. 10. 69,552
R. R. Russell, Gibson Oil Corp. 1 ..... dry
Cannon, Kershaw & Lovingston 1 ..... dry
J. H. Tippett, Kirby Petroleum Co. 1.. 56
I. G. Yates, Oregon Oil Corp. 1 ..... dry
University, Kirby Petroleum Co. 1 .... dry
I. G. Yates-G, Mid-Kansas Oil & Gas 1.10,344
Scharff & Brackman, Rowan & Tong 1. dry

Completions 15
Production 138,619
Dry 6

REEVES COUNTY
Grisham-Hunter, Vacuum Oil Co. 1 ... dry
RUNNELS COUNTY
C. C. Gray, Empire Gas & Fuel Co. 1.. dry
H. P. Serratt, Gibson & Johnson 1 40
J. H. Webb, Globe Petroleum Co. 1 .... dry

Completions 3
Production 40
Dry 2

REAGAN COUNTY
University, Big Lake Oil Co. 129 335
University, Big Lake Oil Co. 137 85
Sawyer Cattle Co., Roxana Pet. Corp. 1 dry
J. D. Suggs, The Texas Company 3 .... dry

Completions 4
Production 470
Dry 2

TAYLOR COUNTY
I. T. Latimer, Owen & Sloan 1 ..... dry
TOM GREEN COUNTY
M. B. Pulliam-B, World Oil Co. 1 ..... dry
WINKLER COUNTY
Ida Hendricks-B, Humble O. & R. Co. 4 1520
Grisham-Hunter, Independent O. & G. 4.2000
Grisham-Hunter-B, Independent O. & G. 4 600
Ida Hendricks, Magnolia Pet. Co. 2 240
Grisham-Hunter-B, Pure Oil Co. 4 1500
Grisham-Hunter-A, Republic Prod. Co. 2 8,160
Ida Hendricks-C, Roxana Pet. Corp. 6.6574
Ida Hendricks, T-67-C, Southern Crude Oil Pur. Co. 5 655
T. G. Hendricks, T-67-3-B, Southern Crude Oil Pur. Co. 1 10,972
Ida Hendricks-D, Atlantic Oil Prod. Co. 4 9600
Grisham-Hunter, Humble O. & R. Co. 7.4236
Grisham-Hunter, Humble O. & R. Co. 10.1896
Ida Hendricks-B, Humble O. & R. Co. 5.1200
Ida Hendricks-A, Landreth Prod. Corp. and Roxana Pet. Corp. 2 1411
Grisham-Hunter-D, Roxana Pet. Corp. 3. 960
Grisham-Hunter-D, Roxana Pet. Corp. 4. 289
Ida Hendricks, T-88-A, Southern Crude Oil Pur. Co. 2 1200
Ida Hendricks, T-88-H, Southern Crude Oil Pur. Co. 2 1100
Ida Hendricks, Turman and others 8 686
Grisham-Hunter, Atlantic Oil Prod. Co. 5 6768
Ida Hendricks, T-67-B, Southern Crude Oil Pur. Co. 2 500
Grisham-Hunter-A, Texon Oil & Land Co. 2 915
H. E. Collins, White Eagle Oil & Refining Co. 1 ..... dry
Grisham-Hunter, Atlantic Oil Prod. Co. 6 8120
T. G. Hendricks-C, Humble O. & R. Co. 1 12,000
Grisham-Hunter, Pure Oil Co. 4 7800
Ida Hendricks-C, Roxana Pet. Corp. 7. 947

Completions 27
Production 86,849
Dry 1

NORTH CENTRAL TEXAS

Summary of Wells Completed

County—	Comp.	Prod.	Dry	Gas
Archer	50	3,732	24	0
Brown	62	3,701	23	4
Callahan	8	0	7	1
Clay	3	18	1	0
Coleman	16	20	11	3
Comanche	5	12	2	1
Cooke	3	18	2	0
Denton	2	0	2	0
Eastland	18	263	13	1
Foard	1	0	1	0
Grayson	1	0	1	0
Jack	9	60	7	0
McCulloch	1	0	1	0
Montague	13	259	2	0
Palo Pinto	1	0	1	0
Shackelford	24	2,079	10	0
Stephens	6	65	4	1
Throckmorton	1	4	0	0
Wichita	37	990	11	0
Wilbarger	20	2,763	6	1
Young	65	1,604	36	0
Total April	846	14,588	165	14
Total March	363	15,204	165	15
Difference	17	616	0	1

Summary of Rigs and Wells Drilling

North Texas—	Rigs	Drg.	S. D.	Ttl.
Crane	1	6	2	8
Crockett	10	9	5	24
Howard	7	15	10	32
Jones	1	4	3	8
Mitchell	0	2	2	4
Pecos	20	22	11	53
Reagan	1	6	16	23
Runnels	3	8	6	17
Upton	3	4	4	11
Winkler	45	112	8	165
Miscellaneous counties	16	33	47	96
Total April	107	220	114	441
Total March	109	226	87	422
Difference	2	6	27	19
North Central Texas—				
Archer	3	24	3	30
Brown	16	40	20	76
Callahan	3	7	7	17
Coleman	4	32	22	58
Cooke	2	6	2	10
Eastland	2	21	7	30
Jack	1	5	9	15
Montague	5	6	2	13
Palo Pinto	1	4	3	8
Shackelford	1	18	3	22
Stephens	1	10	8	19
Throckmorton	0	3	0	3
Wichita	6	25	2	33
Wilbarger	19	43	5	67
Young	12	39	18	70
Miscellaneous counties	2	9	23	34
Total April	79	292	134	505
Total March	88	306	127	521
Difference	9	14	7	16
Grand total N. Central and W. Texas, Apr.	186	512	248	946
Grand total N. Central and W. Texas, Mar.	197	532	214	942
Difference	11	20	34	3

WELLS COMPLETED
ARCHER COUNTY
Mankins and others, F. P. Cullum and others 1 9
Wolf, J. R. Elliott and others 1 ..... dry
L. F. Wilson-C, Fain-McGaha and Humble O. & R. Co. 3 12
Parrish, Gardner, Wilson & McCaldin 3. dry
Fallon heirs, F. H. Gohlke and others 1. 60
Parrish, F. H. Gohlke and others 2 80
L. F. Wilson, L. P. Hammond 1 ..... dry
L. F. Wilson-B, D. O. Johnson and others 3 175
L. F. Wilson, Wilson and Humble O. & R. Co. 1 ..... dry
L. F. Wilson, Long and others 1 ..... dry
Farmer-B, Panhandle Ref. Co. and Burton 4 30
Farmer, Panhandle Ref. Co. and McGregor 5 22
Wilson, Bridwell Oil Co. et al 1 245
McCrory, trustee, Dixie Oil Co. 1 ..... dry
Wilson-C, Fain-McGaha Oil Corp. and Humble O. & R. Co. 4 40
Wilson-D, Fain-McGaha Oil Corp. and Humble O. & R. Co. 1 ..... dry
Wilson-B, Fain-McGaha and United Producers Co. 5 174
Wilson-B, Fain-McGaha and United Producers Co. 6 135
Taylor, F. H. Gohlke and others 2 75
Wilson-A, D. O. Johnson and others 4.. dry
Wilson-E, Petroleum Producers Co. and others 1 182
Holasek, Bridwell Oil Co. 1 ..... dry
York, Burns and others 1 ..... dry
Dycus, Minton 1 ..... dry
Farmer-A, Panhandle Ref. Co. and Grisham 4 25
Ikard, Steed and others 1 ..... dry
Young, The Texas Company 1 ..... dry
Lemmond, United Producers Co. 1 ..... dry
Parkey-A, Empire Gas & Fuel Co. 1.... 87
Parrish Brothers, Fain-McGaha Oil Corporation 1 ..... dry
Wilson-C, Fain-McGaha and Humble O. & R. Co. 5 120
Wilson B, Fain-McGaha and United Producers Co. 4 312
Wilson, F. H. Golke and others 4 70
Turbeville, J. P. Rayzor 1 30
Turbeville-A, Simms Oil Co. 22 30
Lisle, Consolidated Oil Co. 1 ..... dry
Garvey, Panhandle Ref. Co. and Johnston 2 15
Crawford, Rosae & Humble O. & R. Co. 1 dry
Martin, Underwood Drilling Co. 1 ..... dry
Wilson, Bridwell Oil Co. and others 2.. 70
Wilson-B, Fain-McGaha Oil Corp. and United Prod. Co. 8 276
Wilson, D. O. Johnson and others 4..... 160
Wilson, D. O. Johnson and others 5..... 146
Wilson-E, Petroleum Producers Co. and others 3 165
Turbeville-A, Simms Oil Co. 23 ..... dry
Lowery, Burns & Kelleher 1 ..... dry
Andrews, Hines and others 1 ..... dry
Conner, Long and others 1 ..... dry
Garvey, Panhandle Ref. Co. 2 ..... dry
Wilson, Wright and others 4 ..... dry

Completions 50
Production 2732
Dry 24

BROWN COUNTY
Hickman, Breeding and others 2 15
Perry, Clark-Buffalo Oil Co. 1 ..... dry
Perry, Clark-Buffalo Oil Co. 2 ..... dry
Newton-A, Cranfill & Reynolds 1 18
Turner, Daniels and others 1 ..... dry
Tate, Evans and others 1 ..... dry
Bush, Henshaw Oil Corp. 3 100
Bush, Henshaw Oil Corp. 4 316
Mansfield, Kelsey and others 1 ..... dry

Hickman, Kone Production Co. 10 35
G. T. Butler, Midland Oil Co. 1 165
Keeler, G. P. Mitcham 2 21
Bush, Peckham and others 2 75
Bush, Peckham and others 3 150
Woods, Prairie Oil & Gas Co. 1 ..... gas
Curry, Scrivenor and others 2 150
Miers, Scrivenor and others 1 45
Truehart estate, E. L. Smith Oil Co. 1.. 38
Perry, Superior Oil Co. 1 ..... dry
Hickman, The Texas Company 25 76
Hickman, The Texas Company 26 34
Baugh, Woods and others 1 ..... gas
Whitted, Calcasieu Oil Co. 1 ..... dry
Caldwell, Caldwell 1 ..... dry
Collier, Dr. Lloyd and others 2 5
Simmons, Pannuco Oil Co. 1 ..... dry
Shelton, Uhl and others 2 ..... gas
Galyan, United Royalty Co. 1 ..... dry
Eubanks, Cranfill & Reynolds 1 757
Alvis, Daniels and others 1 ..... dry
Hickman-A. Gilman & McMurray 1..... dry
Bush, Henshaw Oil Corp. 5 15
Boysen, Jay Hawk Oil Co. 4 40
Hutton, Pandem Oil Corp. 8 60
Curry, M. L. Richards 5 50
Hanford, G. P. Mitcham 1 ..... dry
Cross, Baker and others 1 50
Newton-B, Cranfill & Reynolds 1 20
Moore, Forest Oil Co. 4 312
Hickman-A, Gilman & McMurray 2 400
Bush, Henshaw Oil Corp. 6 60
Bush, Henshaw Oil Corp. 8 175
Boysen, Jay Hakw Oil Co. 3 75
Hutton, Pandem Oil Corp. 7 7
Butler, Simms Oil Co. 1 ..... dry
Truehart, Smith Oil Co. 2 40
Childers, Hammon & Garrett 1 ..... dry
Linton, Inland Oil Co. 1 ..... gas
Childers, A. E. Metts 2 ..... dry
Graham estate, Amerada Pet. Corp. 1.. dry
Hickman, Anna Bell Oil Co. 1 55
Perry, Clark-Buffalo Oil Co. 3..... dry
Hill-B, Cranfill & Reynolds 2 ..... dry
Newton-A, Cranfill & Reynolds 2 ..... dry
Bush, Henshaw Oil Co. 7 225
Butler, Midland Oil Co. 2 165
Curry, M. L. Richards 6 40
Windham, Scrivenor and others 1..... dry
Keeler, Wentz & Smi-Lock Pet. Co. 1.. dry
Tyler & Thomas, A. M. Wilbern 1..... dry
Jopling, John Harbeston 1 3
Jacobs, Spence and others 1 10

Completions 62
Production 3701
Gas production 4,040,000
Dry 23

CALLAHAN COUNTY

Hickman, W. J. Armstrong 1 ..... dry
Jackson, Farlin Oil Co. 1 ..... dry
Harris, E. B. Richards 1 ..... dry
Ingram, States Oil Corp. 1 ..... dry
Jackson-A, Beams & Kingwood 2 ..... gas
Waller, Bradstreet 5 ..... dry
Harris, Davis & Barbee 1 ..... dry
Berry, Kingwood Oil Co. 1 ..... dry

Wells completed 8
Gas production 2,000,000
Dry 7

CLAY COUNTY

Wright, Western Oil Corp. and others 2. 8
Wetsell, H. R. Edwards 2 ..... dry
Wright, Western Oil Corp. and others 3. 10

Wells completed 3
Production 18
Dry 1

COLEMAN COUNTY

Davenport, Forster and others 2 10
Goodwin, Forster and others 2 ..... dry
Lowe, B. L. Mollenkopf 1 ..... dry
Henderson, Roxana Pet. Corp. ..... dry
Johnson, Cadenhead & Andrews 1 ..... dry
Robertson, Corsicana O. & R. Co. 1 ..... dry
Kingsberry, Delta Oil Co. 1 ..... dry
Guthrie, Dozier and others 1 ..... gas
Duggins, Mexana Oil Co. 1 ..... dry
Burns, Pitts and others 1 ..... dry
Sealy-Smith, The Texas Company 1 ..... dry
Beck, Ehorn and others 1 ..... dry
Morris, Midwest Exploration Co. 2 ..... gas
Stevens, Roth & Faurot 2 ..... dry
Hill, L. Smith and others 1 10
Hunter Brothers Syndicate & Manhattan Oil Co. 1 ..... dry

Wells completed 16
Production 20
Gas production 5,474,000
Dry 11

COMANCHE COUNTY

Strickland, Carter and others 1 ..... gas
Cosby, Welsh and others 1 ..... dry
Smith, Fain and others 1 12
Kirk, Hoffer Oil Corp. 1 ..... gas
Poteet, Scoggins and others 1 ..... gas

Wells completed 5
Production 12
Gas production 6,000,000
Dry 2

COOKE COUNTY

Chaffin, Fain-McGaha Oil Corp. 2 18
Campbell-A, W. J. Green et al 1 ..... dry
Whaley, McElreath & Suggett 1 ..... dry

Wells completed 3
Production 18
Dry 2

DENTON COUNTY

Fortenberry, Lesh-McCall et al 1 ..... dry
Boner & Phillips, C. L. Harty and others 1 ..... dry

Wells completed 2
Dry 2

EASTLAND COUNTY

Barker, Applegate and others 1 ..... dry
Holcomb, Teatsorth and others 1 8
Van Norman fee, Texas Pacific Coal & Oil Co. 2 ..... dry
Ward, Gilman & Simmons 1 ..... dry
Turner, The Texas Company 1 ..... dry
Connellee, Amyx and others 5 ..... dry
Turner, Charter Oil Co. 1 ..... dry
Lightfoot, Knox and others 1 ..... dry
Johnson, Lewis and others 1 15
O'Rearm, J. B. Gordon 1 ..... dry
McClelland, Moody Oil Corp. 1 ..... dry
Pence, Phillips Pet. Co. 1 ..... dry
Watson, Root and others 4 75
Jones, Gholson and others 1 165
Woods, Heath and others 1 ..... dry
Anderson, Lone Star Gas Co. 1 ..... gas
Anderson, Lone Star Gas Co. 2 ..... dry
Jones, Adamson & Bearman 1 ..... dry

Wells completed 18
Production 263
Gas production 2,500,000
Dry 13

FOARD COUNTY

Atkins, Clark and others 1 ..... dry

GRAYSON COUNTY

Texas Nursery Co., J. M. Burnham and others 1 ..... dry

JACK COUNTY

Fields, Consolidated Oil Co. and The Texas Company 1 ..... dry
First State Bank of Bryson, Lydecker and others 1 40
Ainsworth estate, Baldwin and others 1. dry
Walker, S. E. J. Cox 1 ..... dry
Crawford and others, Amerada Petroleum Corp. 1 ..... dry
Crawford and others, Amerada Petroleum Corp. 2 ..... dry
Crawford and others, Amerada Petroleum Corp. 3 ..... dry
Crawford and others, Amerada Petroleum Corp. 4 ..... dry
Cullers and others, Shaw Oil Co. 9 20

Wells completed 9
Production 60
Dry 7

M'CULLOCH COUNTY

J. L. Cox, Dobbs & Kries 1 ..... dry

MONTAGUE COUNTY

Loy and others, Pure Oil Co. 5 40
Bouldin, R. I. Carter 4 30
Cunningham and others, Carter & Rycade Oil Corp. 8 32
Salmon and others, Continental Oil Co. 7 24
Salmon and others-B, Continental Oil Co. 2 9
Jackson, United Producers Co. 1 ..... dry
Shockley, Crenshaw and others 1 ..... dry
Bouldin, Oil Operators Trust Co. 7 15
Bouldin, Oil Operators Trust Co. 8 25
Cunningham and others, Gulf Prod. Co. 15 15
McGaughy, Bridwell-Heydrick and others 6 44
Salmon, Continental Oil Co. 9 18
Loy and others, Pure Oil Co. 1 7

Wells completed 13
Production 259
Dry 2

PALO PINTO COUNTY

Jones, W. A. Patterson 1 ..... dry

SHACKELFORD COUNTY

Gorsuch, Kingwood Oil Co. 2 ..... dry
Witty, Phillips Pet. Co. 4 ..... dry
W. L. Cook-B, Section 85, Roeser & Pendleton 13 8
Alexander, Amerada Pet. Corp. 1 20
Alexander, Catlett and others 1 7
Davis, J. S. Coaden, Inc., 2 17
Matthews, Dingee and others 1 10
Davis, Hope Pet. Corp. 10 70
Cook-A, Section 62, Roeser & Pendleton 2 ..... dry
Cook-B, Section 61, Roeser & Pendleton 6 40
Matthews, Section 34, Skelly Oil Co. 1 .. 83
Matthews, Section 34, Tannehill Oil Co. 2 165
Matthews, M. R. Brann 1 ..... dry
Nall, George Callahan 2 ..... dry
Matthews, J. P. Harris 2 15
Moberly, McLester Oil Co. and others 1. dry
Davis, C. Phillips & DeWitt 1 ..... dry
Matthews, Section 27, Tannehill Oil Co. 1 820
Matthews, Treat Oil & Gas Co. 1 200
Scarborough, The Texas Company 1 .... dry
City of Albany, Crabb & McNeil 1 ..... dry
Davis, Gilman & McMurray 1 7
Flippen, Hogan and others 1 ..... dry
Matthews, Pet. Producers Co. 1 620

Wells completed 24
Production 2,079
Gas production 3,400,000
Dry 10

STEPHENS COUNTY

Mitchell, McGinley and others 2 ..... dry
Binney, Texas Pacific Coal & Oil Co. 73 65
Ledbetter, Beatty and others 1 ..... gas
Langford, Thompson and others 1 ..... dry
Vick, Hanlon Gasoline Co. 1 ..... dry
Tomlinson, Hickok Prod. & Dev. Co. 1.. dry

Wells completed 6
Production 65
Gas production 700,000
Dry 4

THROCKMORTON COUNTY

Matthews, Parker and others 5 4

WICHITA COUNTY

Pace, R. I. Carter 1 ..... dry
Overby, Grayce Oil Co. 1 35
Overby, Grayce Oil Co. 2 5
Overby, Grayce Oil Co. 3 22
Overby, Grayce Oil Co. 4 20
Overby, Grayce Oil Co. 5 15
Overby, Grayce Oil Co. 6 20
Kemp & Kempner, Grayce Oil Co. and J. H. Cottom 11 88
Griffin, Humble Oil & Ref. Co. 1 ..... dry
S. Kelly, S. L. Lewis 1 ..... dry
W. T. Waggoner, The Texas Co. ... 349 dry
J. A. Watkins, Vergate Oil Co., 5-Deep.. 15
McCormick, Lomax and others 2 ..... dry
Overby, Grayce Oil Co. 7 15
Kemp & Kempner, Grayce Oil Co. and Cottom 5 115
River Bed Permit No. 11751, H. Hines et al 1 ..... dry
G. Jennings, Gulf Production Co. 19 6
Waggoner, C. H. Clark and others 7 ... 20
Logan, Ramming & Saunders 1 ..... dry
Kemp & Kempner, Ridgeway & Whittiker 1 5
W. T. Waggoner, The Texas Company 347 50
Rexford, Brickley & Kinnison 8 ..... dry
H. Willis, T. M. Conrey 13 3
H. Reilly, Magnolia Pet. Co. 138 28
Ruyle, Ruyle Farm Oil Co. 50 12
Crudup, Stump & Co. 1 ..... dry
Womack, Bridwell & Mayfield 1 19
Kemp & Kempner, Coleman & Coppock 6 150
Kemp & Kempner, Cureman & Coppock 7 60
Kemp & Kempner, Lot 4, Coleman & Coppock 4 102
Cooper, Chester Everts 2 ..... dry
Overby, Grayce Oil Co. 8 15
Kemp & Kempner, Grayce Oil Co. and Cottom 6 50
Kemp & Kempner, Grayce Oil Co. and Cottom 12 80
Waggoner Brothers, T. F. Hunter 31 ... 5
Kemp & Kempner-A, Shappell Oil Co. 16 35
Munger, L. E. Trout and others 1 ..... dry

Wells completed 37
Production 990
Dry 11

WILBARGER COUNTY

Bates, Consolidated Oil Co. 1 ..... dry
W. T. Waggoner, Consolidated Oil Co. and Cosden 10 7
W. T. Wagoner-L. Fain-McGaha Oil Corp. 3 210
W. T. Waggoner-SS, Phillips Pet. Co. 2. 20
W. T. Waggoner-C, The Texas Co. 1 ... 508
W. T. Waggoner-E, The Texas Co. 1 624
W. T. Waggoner, Tower & McKanna 2.. 580
Wheeler, Consolidated Oil Co. 1 ..... dry
Castleberry-B, The Texas Co. 3 ..... dry
W. T. Waggoner-E, The Texas Co. 3 .... gas
W. T. Waggoner-F, Waggoner Ref. Co. 4 145
W. T. Waggoner-B, Cosden & Co., Inc., 18 38
W. T. Waggoner-O, Fain McGaha Oil Corp. 4 ..... dry
W. T. Waggoner, Sloan 2 ..... dry
W. T. Waggoner, The Texas Co. 345 245
W. T. Waggoner-M, Fain-McGaha Oil Corp. 4 53
Guyer, McLaughlin Brothers 1 ..... dry
W. T. Waggoner-JJ, Phillips Pet. Co. 8 65
W. T. Waggoner-B, Prairie Oil & Gas Co. 5 40
W. T. Waggoner-B, Staley-Wynne & Co. 1 228

Wells completed 20
Production 2763
Gas production 165,000
Dry 6

YOUNG COUNTY

McKinley, Allday Oil Corp. & Carter 5.. 25
McKinley, Allday Oil Corp. & Carter 6.. 12
Anderson, Cooper and others 1 ..... dry
Hawkins, J. C. Cunningham 4 125
Barrett, Day & Sweeney 1 ..... dry
Knox-A, Kessler & Logan 1 ..... dry
Hawkins, Kleiner and others 1 25
Langston, Kleiner and others 4 130
Hunt, Madden & Hunt 2 ..... dry
Johnson, W. H. Meyers, trustee, 1 15
Crossland, Reed & Wotten 1 ..... dry
McKinley, Riggs et al 3 ..... dry
McKinley, Shaw-Riggs and others 1 20
Lowe, Wolf and others 3 ..... dry
Criswell, Hines & Whatley 1 25
Whittenburg, Nash & Windfohr 1 ..... dry
Stinson, Texas Pacific Coal & Oil Co. 1.. dry
Anderson, Albright and others 1 ..... dry
McKinley, Allday Oil Corp. & Carter 7.. 5
Miller, Anderson & Chancellor 1 ..... dry
Nall, Consolidated Oil Co. & Kimberlin 1 dry
Thomas, Cooper & Hamilton 1 ..... dry
Hawkins, J. C. Cunningham 5 40
Furr, Donahoo & Atlantic Oil Producing Co. 1 ..... dry
Hawkins, Kleiner and others 2 10
Langston, Kleiner and others 5 475
Loftin, Moran and others 1 ..... dry
Pittman, Panhandle Refining Co. and others 2 ..... dry
Boone, Pennell Oil Co. 4 80
Johnson, Shappell Oil Co. 4 40
Johnson, Shappell Oil Co. 5 5
Spearman, Williams and others 1 ..... dry
Stovall, Ruthada Oil Co. 5 ..... dry
Johnson-B, Allday Oil Corp. 3 30
McKinley, Allday Oil Corp. & Carter 8.. 12
Johnson, Amerada Pet. Corp. 3 ..... dry
Johnson, Amerada Pet. Corp. 4 ..... dry
Boone, Bullington, Lee & Pendleton 1 .. 5
Hamilton, Christie & Steed 1 26
Hawkins, Kleiner and others 3 ..... dry
Johnson, Shappell Oil Co. 6 3
Johnson, Shappell Oil Co. 7 40
McKinley, Shaw-Riggs and others 2.... dry
McKinley, Shaw-Riggs and others 3 103
Moreland, Simms Oil Co. 1 ..... dry
Horton, Williams & Willis 1 ..... dry
Dunagan, Wolf 4 ..... dry
Jeffery, Wolf and others 1 ..... dry
Johnson, Amerada Pet. Corp. 2 ..... dry
Childress & Donnell, Mid-Tex Oil & Gas Co. 3 136
McCluskey, Panhandle Ref. Co. 1 50
Eddleman Brothers, Paull Oil Co. 1 40
Donnell, Robert Oil Corp. 1 ..... dry
Stovall Ruthada Oil Co. 2 30
Martin, Shaw and others 1 ..... dry
E. C. Stovall, E. C. Stovall 9 ..... dry
Johnson-B, Allday Oil Corp. 4 50
Tucker, Hawthorne & Hodges 1 ..... dry
Rowley, Kleiner and others 1 ..... dry
Johnson, Meyers, trustee, 2 ..... dry
Holt, Parker and others 1 ..... dry
Boone, Pennell Oil Co. 5 7
McKinley, Riggs and others 4 40
Sparks, Willis and others 1 ..... dry
Farmer, Wo-Mac Oil Co. 1 ..... dry

Wells completed 65
Production 1604
Dry 36

EAST TEXAS

	Comp.	Prod.	Dry	*Gas	Rigs	Drg.	Ttl.
Cass	0	0	0	0	0	1	1
Harrison	1	0	1	0	0	5	5
Marion	0	0	0	0	0	1	1
Panola	9	6	2	7	2	8	11
Shelby	0	0	0	0	0	1	1
Ttl. Apr.	10	6	3	7	3	16	19
Ttl. Mar.	19	5	5	13	6	15	21
Difference	9	5	2	6	3	1	2

*Gas production: Panola County, 30,938,000 feet.

MISSISSIPPI

	Comp.	Prd.	Dry	Gas	Rgs	Drg.	Ttl.
Alcorn	0	0	0	0	0	1	1
Chickasaw	0	0	0	0	0	1	1
Claiborne	0	0	0	0	0	2	2
Hines	0	0	0	0	0	1	1
Itawamba	0	0	0	0	1	0	1
Jackson	0	0	0	0	0	1	1
Jasper	0	0	0	0	0	1	1
Lauderdale	0	0	0	0	1	1	2
Lee	0	0	0	0	0	2	2
Monroe	1	0	1	0	0	7	7
Rankin	0	0	0	0	0	1	1
Simpson	0	0	0	0	0	1	1
Stone	0	0	0	0	0	1	1
Washington	0	0	0	0	0	1	1
Webster	0	0	0	0	0	1	1
Total	1	0	1	0	2	22	24

ALABAMA

	Comp.	Prd.	Dry	Gas	Rgs	Drg.	Ttl.
Franklin	0	0	0	0	0	1	1
Houston	0	0	0	0	0	1	1
Lawrence	1	0	1	0	0	2	2
Marion	0	0	0	0	0	1	1
Total	1	0	1	0	0	5	5

WELLS COMPLETED
EAST TEXAS
HARRISON COUNTY

Simpson, Holloway Sur.: Armstrong, Tylong Oil & Gas Co. 1 ..... dry

PANOLA COUNTY

Alex Birdsong Sur.: S. M. Burns, Beckman & Freeman 1 ..... gas
B. C. Jordan Sur.: Cavin, S. H. Gardner and others 2 ..... gas
Evans Brackins Sur.: T. C. Adams, Nat. Gas Products Co 4 ..... dry
Evans Brackins Sur.: T. C. Adams, Nat. Gas Products Co 5 ..... gas
B. C. Jordan Sur.: Roquemore, Nat. Gas Products Co. 2 ..... gas
J. Womack Sur.: W. C. Agurs, M. H. Smith and others 1 ..... gas
J. Womack Sur.: W. C. Agurs, M. H. Smith and others 2 ..... dry
B. C. Jordan Sur.: T. C. Adams, The Texas Company 4-A ..... gas
B. C. Jordan Sur.: Crenshaw, D. Thomason 5 ..... gas

Wells completed 9
Gas 7
Gas production 30,938,000
Dry 1

ALABAMA
LAWRENCE COUNTY

24- 6- 9 Horton, Lawrence County Leaseholders, Inc. 1 ..... dry

MISSISSIPPI
MONROE COUNTY

12-13-18 Dill, Amory Petroleum Co. 1.. dry

NORTH LOUISIANA

Summary of Field Operations

	Comp.	Prod.	Dry	*Gas	Rgs	Drg.	Ttl.
Blenville	1	0	1	0	0	2	2
Bossier	14	55	2	10	5	18	23
Caddo	8	155	4	1	6	21	27
Caldwell	0	0	0	0	0	1	1
Catahoula	1	0	1	0	0	2	2
Claiborne	1	0	1	0	0	1	1
DeSoto	6	0	5	1	1	4	5
E. Carroll	0	0	0	0	0	2	2
Franklin	1	0	1	0	0	1	1
Grant	0	0	0	0	0	3	3
LaSalle	1	0	1	0	0	2	2
Lincoln	1	0	1	0	0	0	0
Madison	0	0	0	0	0	1	1
Morehouse	2	0	1	1	2	4	6
Natchitoches	0	0	0	0	0	1	1
Ouachita	7	0	1	6	5	6	11
Rapides	0	0	0	0	0	3	3
Richland	4	0	0	4	5	14	19
Sabine	0	0	0	0	1	4	5
Union	3	0	2	1	4	3	7
Webster	6	3,658	0	5	13	18	31
Winn	0	0	0	0	3	0	3
Ttl. Apr.	56	3,868	21	29	45	111	156
Ttl. Mar.	66	2,590	28	32	47	107	154
Difference	10	1,278	7	3	2	4	2

*Gas production: Bossier Parish, 229,336,000 feet; Caddo, 11,172,000 feet; DeSoto, 2,000,000 feet; Morehouse, 28,282,000 feet; Ouachita, 27,000,000 feet; Richland, 167,438,000 feet; Union, 5,890,000 feet; Webster, 57,824,000 feet; total, 528,942,000 feet.

WELLS COMPLETED
BIENVILLE PARISH

16-18- 7 J. S. Calhoun, Humble Oil & Refining Co., 1 (rock salt).. dry

BOSSIER PARISH

21-23-11 Bain, Atlantic Oil Producing Co., 1 ..... dry
6-22-11 Crawford, Arkansas Natural Gas Co., 1 ..... gas
36-16-12 Van Hoose, Arkansas Natural Gas Co., 1 ..... gas
33-23-11 Bollinger, Delaware-Louisiana Development Co., 2 ..... gas
21-16-12 Mercer, S. H. Goodwin, 1 ..... dry
25-23-12 J. W. Peyton, Louisiana Petroleum Co., 1 ..... gas
1-22 12 Cason, Magnolia Petroleum Co., 1 ..... gas
25-23-12 Matlock, Magnolia Petroleum Co., 1 ..... gas
25-16-12 Hodges, J. S. McCullough, 6.. 35
25-23-12 Floyd, Natural Gas Products Co., 1 ..... gas
25-23-12 Barnett, Northwest Louisiana Gas Co., 1 ..... gas
25-16-12 Caplis, R. O. Roy, 7 20
31-23-11 Henry Rose, The Texas Company, 2 ..... gas
23-19-11 Smith, G. W. Wetherbee, 2.... gas

Wells completed 14
Production 55
Gas 10
Gas production 229,336,000
Dry 2

CADDO PARISH

14-21-15 Dillon, Dixie Oil Co., 91..... 95
15-21-15 Spell, Haynes Brothers, 1..... 10
28-18-16 J. W. Furrh, Magnolia Petroleum Co., 2 1
15-21-15 Herndon, Pittsburgh Oil & Development Co., 1 ..... dry
32-21-15 Muslow, Shreveport Oil Corp., 2 50
14-21-15 A. Herndon, The Texas Company, 9 ..... dry
14-21-15 Noel, The Texas Company, 1-B dry
9-14-16 Ben Hines, Tubbs and others, 1 dry

Wells completed 8
Production 155
Gas 1
Gas production 11,172,000
Dry 4

CATAHOULA PARISH

26-9-6 Beasley, Lochnager Oil & Gas Co., 3 ..... dry

CLAIBORNE PARISH

20-21- 7 Meadows, Rudesaele and others 1 ..... dry

DESOTO PARISH

12-11-16 Stevens, Baca Drilling Co., 1 dry
33-14-13 Lee, R. O. Roy, 1 (drk)..... abd
3-13-13 Tracy, R. O. Roy, 1..... dry
5-13-13 Whitaker, R. O. Roy ..... dry
4-12-11 Fortson, Williams and others, 1 gas
18-10-12 Haywood, Wingfield and others 1 ..... dry

Wells completed 6
Gas 1
Gas production 2,000,000
Dry 5

FRANKLIN PARISH

11-11- 6 Tensas Delta Land Co., Louisiana Petroleum Co. 1..... dry

LASALLE PARISH

19-10-2e Urania, H. F. Taylor 6..... dry

LINCOLN PARISH

17-19-1w Griffin, H. M. Harrell 1 ..... dry

MOREHOUSE PARISH

26-20- 5 Atkins, United Carbon Co. 1 (drk) ..... abd

21-20- 4 J. Davis, United Carbon Co. 1 ..... gas

Gas production 28,282,000

OUACHITA PARISH

21-19- 4 Fee, Hatcher & Evans 7 ..... gas

12-19- 3 Stubbs, Imperial Oil & Gas Products Co. 5 ..... gas

14-19- 3 Stubbs, Imperial Oil & Gas Products Co. 6 (drk) ..... abd

32-19- 4 Pereboom, Jordan Drilling Co. 1 ..... gas

28-20- 4 Kate Cole, Palmer Corp. 3 ..... gas

11-18- 4 Filhoil, Pioneer Oil & Gas Co. 1 gas

29-20- 4 Smith, Ouachita Natural Gas Co. 9 ..... gas

Wells completed 7
Gas 6
Gas production 27,000,000
Dry 1

RICHLAND PARISH

21-16- 6 Duff, W. C. Feasel, 1 ..... gas

20-18- 6 Ches. Wymond, Gulf Refining Co. 1 ..... gas

17-16- 6 Sartor, Moody & Seagraves 1-C gas

19-16- 6 Mulhern, Ruston Drilling Co. 1 gas

Wells completed 4
Gas 4
Gas production 167,438,000

UNION PARISH

21-22-1e Tugwell, Barbour Oil Co. ..... dry

22-19-1e Hamilton, Ouachita Natural Gas Co. 1 ..... dry

36-20- 3 Steel, Ruston Drilling Co. 1.. gas

Gas production 5,890,000

WEBSTER PARISH

36-23-10 Porter-Wadley Lumber Co., C. H. Lyons 1 ..... gas

29-23- 9 Porter-Wadley Lumber Co. C. H. Lyons 2 ..... gas

29-23- 9 Bailey, Magnolia Petroleum Co 1 ..... gas

27-21-10 G. W. Cole, Magnolia Petroleum Co. 1 ..... gas

15-21-10 Bodcaw, Ohio Oil Co 38 3668

30-23- 9 Haines, The Sun Company 1.. gas

Wells completed 6
Production 3658
Gas 5
Gas production 57,824,000

ARKANSAS

	Comp.	Prod.	*Gas	Rigs	Drg.	Ttl.	
Ashley	0	0	0	0	1	0	1
Bradley	0	0	0	0	0	2	2
Chicot	0	0	0	0	1	0	1
Clark	0	0	0	0	0	2	2
Clay	0	0	0	0	0	1	1
Columbia	0	0	0	0	1	3	4
Dallas	0	0	0	0	0	1	1
Faulkner	0	0	0	0	0	1	1
Franklin	0	0	0	0	2	1	3
Garland	0	0	0	0	0	1	1
Grant	0	0	0	0	0	1	1
Jackson	0	0	0	0	0	1	1
Lincoln	0	0	0	0	0	1	1
Little River	0	0	0	0	0	1	1
Logan	0	0	0	0	0	1	1
Miller	0	0	0	0	0	2	2
Nevada	1	0	1	0	1	3	4
Ouachita	4	188	0	0	2	4	6
Union*	7	3,252	3	0	26	24	50
Total April	12	3,440	4	0	34	50	84
Total March	10	188	4	0	14	51	65
Difference	2	3,252	0	0	20	1	19

*Gas production 3,000,000 feet.

WELLS COMPLETED
NEVADA COUNTY

1-14-21 Moss, J. J. O'Brien, 17-A (rig) abd

OUACHITA COUNTY

25-15-16 Robertson, Little Fay Oil Co. 5 23
25-15-16 Robertson, Little Fay Oil Co. 6 25
35-15-16 Spahr, F. B. Wood, Trustee, 1 15
34-15-15 Johnson, Phillips Petroleum Co 1 125

Wells completed 4
Production 188

UNION COUNTY

2-17-14 Stegall, E. M., Jones 1 ..... dry
12-17-15 Kavanaugh, W. R. Keever 2-B 25
19-17-14 Cranston, Magnolia Petroleum Co. 4 12
8-16-16 Fagg, Nat. Consolidated Petroleum Co. 1 ..... dry
11-17-14 Dumas, Oilwell Corp. 1 ..... *1226
10-17-14 Gregory, Pure Oil Co. 1 2000
12-17-14 Finley, Simmerall and others 1 dry

Wells completed 7
Production 3252
Dry 3
*With 3,000,000 gas

KENTUCKY-TENNESSEE

Summary of Field Operations

	Comp.	Prod.	Dry	Gas	Rigs	Drg.	Ttl.
Warren	5	11	1	0	0	4	4
Allen	1	2	0	0	0	6	6
Barren	27	148	16	0	0	20	20
Ohio	44	2,108	12	0	1	33	34
Daviess	24	1,197	5	1	5	43	48
McLean	2	0	2	0	0	6	6
Hancock	6	30	4	0	0	3	3
Webster	2	25	0	1	0	0	0
Henderson-Union	1	0	0	1	0	2	2
Muhlenburg	0	0	0	0	0	1	1
Breckenridge	0	0	0	0	0	2	2
Hopkins	0	0	0	0	0	1	1
Butler	0	0	0	0	1	3	4
Cumberland-Monroe	1	0	1	0	0	1	1
Clinton	1	5	0	0	0	0	0
Simpson	0	0	0	0	0	1	1
Wayne	4	66	1	0	0	6	6
Estill	2	3	1	0	0	8	8
Lee-Owsley	0	0	0	0	0	2	2
Wolfe	2	50	0	0	1	4	5
Johnson-Magoffin	1	20	0	0	0	7	7
Floyd-Knott	0	0	0	0	0	3	3
Knox	1	0	0	1	0	3	3
Elliott	1	10	0	0	0	1	1
Clay	0	0	0	0	0	1	1
Total April	125	3,675	43	4	8	161	169
Total Mar.	101	3,541	27	3	6	164	170
Difference	24	134	16	1	2	3	1

TENNESSEE

Summary of Field Operations

	Comp.	Prod.	Dry	Gas	Rigs	Drg.	Ttl.
Clay	8	395	1	2	1	12	13
Jackson	1	100	0	0	0	2	2
Total April	9	495	1	2	1	14	15
Total Mar.	9	78	4	1	0	15	15
Difference	0	417	3	1	1	1	0

KENTUCKY
WELLS COMPLETED
WARREN COUNTY

Bowling Green—Lloyd Crowe, Baker & Kitchen 16 1
Harry Lazarous, Grace S. Brantin 2 1
Gillespie, Baker-Jones 9 3
E. Morgan, Morrow & Hayes 5 6
James Deathridge, O. B. T. Oil 4.. dry

Wells completed 5
Production 11
Dry 1

ALLEN COUNTY

Scottsville—E. H. Woods, S. W. Lowman 9 2

BARREN COUNTY

Glasgow—C. B. Jones, Sampson Oil 14 dry
J. W. Pace, Wood Oil 8 5
J. W. Pace, Wood Oil 9 5
Nichols, White & Sandals 25 10
Pedigo, White & Sandals 3 40
Pedigo, White & Sandals, 4 20
Mayfield, White & Sandals 1 6
Mayfield, White & Sandals 2 6
McCoy, Wood Oil 1 ..... dry
Shirley, Sandals & Oil 1 ..... dry
Thomas Wheeler, J. W. Porter & Co. 1, 2 ..... dry
Fee, Christensen & Co. 1 ..... dry
J. E. Bray, A. W. Ziegler, 2, 3 ..... dry
Buck Clark, R. B. Tyler 1, 2 ..... dry
Siegart, Kouch'ns Leasehold 1 ..... dry
Christensen, Williamson & Co. 1.. dry
Painter Williams, Hunt & Leach 1.. dry
Tucker, Norris Bros. & Warden 1.. dry
J. H. Vance, Fraxure, Cosch & Painter 1 ..... dry
Glass, Esslinger Oil 8 40
W. S. Morton, Esslinger Oil 5 10
L. E. Morton, Esslinger Oil 1 3
L. E. Morton, Esslinger Oil 2 3

Wells completed 27
Production 148
Dry 16

OHIO COUNTY

Hartford—J. S. Bartlett, James C. Ellis 5 ..... dry
J. T. Hoagland, James C. Ellis 3.. dry
Griffith hrs, James C. Ellis 1 ..... dry
Bob Keith, James C. Ellis 4 100
Will Griffith, Penn-Indiana Oil 5.. 17
J. C. Smith, Wood Oil 5 ..... dry
Mary J. Elmore, Wood Oil 25 100
Mary J. Elmore, Wood Oil 26 ..... dry
Mary J. Elmore, Wood Oil 27 30
Mary J. Elmore, Wood Oil 28 50
Rosette Smith, The Ohio Oil 1 ..... dry
Whittaker hrs, The Ohio Oil 50
Ray Rhodes, The Ohio Oil 1 15
Lake-Ambrose, Rex-Pyramid Oil 3.. 80
John Cameron, Wood Oil 1 ..... dry
Ollie Ezell, Daly & Lowman 4 150
Bob Hamilton, Daly & Lowman 3.. 250
Emma Ford, Creek Drilling 1 36
Emma Ford, Creek Drilling 2 20
Bartlett hrs, Creek Drilling 9 150
Bartlett hrs, Creek Drilling 11 100
Bartlett hrs, Creek Drilling 12 100
Bartlett hrs Creek Drilling 13 100
L. C. McKinley, Leeper Oil 2 15
L. C. McKinley, Leeper Oil 3 20
A. F. Midkiff, Chenault & Brooks 1.. dry
A. P. Kelly, S. H. Russell 6 ..... dry
Bob Hamilton, Cumberland Petroleum 7 100
Bob Hamilton, Cumberland Petroleum 8 100
Bean, Hunt & Kerr 1 15
J. W. Whitehouse, Barnard-Reil Oil 1 dry
M. M. Hoover, Spencer & Co. 1 ..... dry
Gilbert Jolly, Jolly Oil Synd. 4.. 36
Gilbert Jolly, Jolly Oil Synd. 5.... 5
Ada Kelly, White Plains Oil & Gas 4 40
Cora Wells, Mecca Oil 13 100
Cora Wells Mecca Oil 14 125
Kelly hrs, J. M. Meredith 2 50
Mary E. Wilson, Boston-Southwestern Oil 6 ..... dry
Mary E. Wilson, Boston Southwestern Oil 7 50
J. Bellamy, Oliver Jenkins & Co. 3.. 28
Gardner Brown, Wade Norris 1 ..... dry
Jasper Lloyd, C. H. Tremor & Co. 1 dry
W. B. Howard, J. T. Hare & Son 3 5

Wells completed 44
Production 2108
Dry 12

DAVIESS COUNTY

Owensboro—John Roby, Leerer Oil 9 20
Peter Mahloskey, Leeper, Noe & Co. 1 350
W. L. [illegible] Oil 4 15
J. Purcell, Bert Thompson 1 ..... dry
C. M. Jones, Coomes & McMahon 1 50
R. H. Neeley, Cumberland Petroleum 1 ..... gas
Geo. Ruby, Sam J. Patrick & Co. 1 dry
Dock Baird, Gurney Development 1 5
Alvey Tyler, Miller & Damron 1.... 100
J. W. Tompkins, Miller & Damron 1 35
J. W. Tompkins, Miller & Damron 2 150
Lem Ford, Miller & Damron 2 95
Trodgen, Buckner-Larue Oil 1 125
Jeff Leet, Miller & Damron 1 100
Massie Hrs. Fred Estes & Co. 1 ..... dry
Mattingley hrs. Conrad Kipp & Co. 4 15
Mattingley hrs. Conrad Kipp & Co. 5 10
Mattingley hrs. Conrad Kipp & Co. 6 30
C. M. Fields, Weideman Oil 2 100
Steve Simon, Weideman Oil 1 ..... dry
Bert Haley, Dug Bolling & Co. 1.... dry
Hazel Miller-Aud, Dug Bolling & Co. 2 20
Lawrence Roby, The Ohio Oil 2 12
Haskins, Whitesville Oil 4 25

Wells completed 24
Production 1197
Dry 5
Gas 1

M'LEAN COUNTY

Calhoun—Lloyd Leachman, Young & Murray 1 ..... dry
Lem Mitchell, Edward Murray 1.... dry

Wells completed 2
Dry 2

HANCOCK COUNTY

Pellville—McBride, Kipp & Co. 1..... dry
James McBride, Lang & Co. 1..... dry
C. M. McBride, Smith & Co. 1..... dry
Rosenblatt, Dave Duncan 1 20
I. E. Stevens, Tri-County Oil & Gas 1 10
Jenkins heirs, Unknown parties 1.... dry

Wells completed 6
Production 30
Dry 4

WEBSTER COUNTY

Sebree—Griffith Browning & Son 1.... 25
Rideout, Unknown parties 1 ..... gas

Wells completed 2
Production 25
Gas 1

HENDERSON-UNION COUNTIES

Corydon—W. C. Riggs, W. R. Abbott & Co. 1 ..... gas

CUMBERLAND-MONROE COUNTIES

Burkesville—Near Dillon Mill. Hunt & Co. 1 ..... dry

CLINTON COUNTY

Wolf River—Pierce, McClintock, Reed & Co. 11 5

WAYNE COUNTY

District 3—Silas Burnett, John Dillon 2 50
District 5—O. E. Gregory, Dewey Oil 9. 6
J. F. Gregory, J. C. Blair & Co. 4.... 10
J. F. Gregory, J. C. Blair & Co. 5.... dry

Wells completed 4
Production 66
Dry 1

ESTILL COUNTY

District 7—Martin Stewart, Levy & Co. 1 dry
District 8—A. J. Rawlins, Waco Oil 16. 3

Wells completed 2
Production 3
Dry 1

WOLFE COUNTY

District 20—John P. Brush, Amp Burnett 2 35
E. C. Spencer, Reno Oil 2 15

Wells completed 2
Production 50

JOHNSON-MAGOFFIN COUNTIES

District 27—J. Wagner, Dora Fairchild 1 20

KNOX COUNTY

North Jellico-North Jellico Coal. Petroleum Exploration 3 ..... gas

ELLIOTT COUNTY

District 34—Daniel Oliver, G. D. Miller, trustee 1 10

TENNESSEE
WELL COMPLETED
CLAY COUNTY

Celina—K. Thurman, H. Z. Clark 1.... 240
Kimes, Carnahan Oil 1 50
Stone hrs. Clark Hill Oil Corp. 1.. 50
Sanford Stamps, Reese & Edwards 1 30
John Overstreet, Coe & Co. 1..... 25
Mary Williams, Ava Oil & Gas 5.... gas
Francis Langford, Ackerman & Co. 1 gas
Mrs. Wilburn, H. L. Ogle & Co. 1.. dry

Wells completed 8
Production 395
Dry 1
Gas 2

JACKSON COUNTY

Gainesboro—W. Rad Hawkins, Celina Oil 10 100

ROCKY MOUNTAIN AREA

WYOMING
Summary of Field Operations

Dist.—	Comp.	Prod.	Dry	Gas	Rigs	Drg.	Ttl.
Salt Creek	4	377	0	0	3	14	17
Albany Co.	0	0	0	0	0	1	1
Big Horn	0	0	0	0	4	2	6
Carbon	0	0	0	0	0	7	7
Converse	0	0	0	0	2	3	5
Fremont	0	0	0	0	0	8	8
Goshen	0	0	0	0	0	1	1
Hot Springs	0	0	0	0	0	4	4
Johnson	0	0	0	0	0	3	3
Lincoln	0	0	0	0	1	0	1
Natrona	2	200	0	0	1	3	4
Niobrara	1	200	0	0	3	3	6
Park	1	25	0	0	1	32	33
Platte	0	0	0	0	0	2	2
Sweetwater	0	0	0	0	0	7	7
Sublet	1	0	1	0	1	20	21
Washakie	0	0	0	0	0	2	2
Weston	0	0	0	0	0	2	2
Uinta	0	0	0	0	1	8	9
Total April	9	802	1	0	17	122	139
Total March	10	1,580	1	0	18	124	142
Difference	1	778	0	0	1	2	3

COLORADO
Summary of Field Operations

County—	Comp.	Prod.	Dry	Gas	Rigs	Drg.	Ttl.
Boulder	2	0	2	0	0	1	1
Fremont	7	285	5	0	1	27	28
Jackson	0	0	0	0	1	5	6
Larimer	1	150	0	0	2	9	11
Las Animas	0	0	0	0	0	4	4
Moffat	0	0	0	0	7	10	17
Rio Blanco	0	0	0	0	1	3	4
Routt	1	80	0	0	2	6	8
Miscl.	3	0	3	0	2	28	30
Total April	14	515	10	0	16	93	109
Total March	11	1,604	6	0	16	81	97
Difference	3	1,089	4	0	0	12	12

NEW MEXICO
Summary of Field Operations

County—	Comp.	Prod.	Dry	Gas	Rigs	Drg.	Ttl.
Chaves	0	0	0	0	2	5	7
Curry	0	0	0	0	0	4	4
Eddy	2	430	1	0	4	11	15
Guadalupe	0	0	0	0	0	3	3
Lea	0	0	0	0	4	11	15
McKinley	1	0	1	0	0	9	9
San Juan	2	0	1	1	4	18	22
Torrance	0	0	0	0	0	6	6
Miscl.	0	0	0	0	1	9	10
Total April	5	430	3	1	15	78	93
Total March	6	85	3	1	14	86	100
Difference	1	345	0	0	1	8	7

UTAH
Summary of Field Operations

	Comp.	Prod.	Dry	Gas	Rigs	Drg.	Ttl.
Total April	4	0	2	2	3	26	29
Total March	0	0	0	0	2	29	31
Difference	4	0	2	2	1	3	8

MONTANA
Summary of Field Operations

District—	Comp.	Prod.	Dry	Gas	Rigs	Drg.	Ttl.
Cat Creek	0	0	0	0	0	4	4
Kevin Sunburst	23	5,391	4	7	21	21	42
Miscellaneous	5	75	4	0	12	65	78
Total April	28	5,466	8	7	34	90	124
Total Mar.	13	160	7	2	37	73	110
Difference	15	5,306	1	5	3	17	14

WYOMING
WELLS COMPLETED

25-37- 63 Delahoyde, Buck Creek Oil 1 200
32-30- 81 Spindletop, Spindletop Oil Synd. 100
23-40- 79 NE, Midwest Oil Co. 31-L.... 70
23-40- 79 SW, Midwest Oil Co. 1-L..... 80
34-40- 79 NW, Midwest Oil Co. 13L..... 216
26-40- 79 SE, Wyoming Associated 21-2. 11
15-26-113 Davis, Texas Prod. Co. 1.... abd
22-37-100 Taylor, Union Oil Co. of California 1 25
2-38- 78 Beaton, Teapot Consolidated Oil Co. 1 100

Wells completed 9
Production 802
Dry and abandoned 1

NEW MEXICO
WELLS COMPLETED

24-20-29 Dooley, Geo. F. Getty, Inc. 3.... 430
2-18-20 State, Compton & Smith 1.... abd
21-29- 9 Mullen, T. G. Nolsch 1..... abd
1-16- 9 Hannett, Jenkins Oil Co. 1..... dry
34-29-11 Viles, A. Johnson, Tr. 1..... gas

Wells completed 5
Production 430
Dry and abandoned 2
Gas production 4,681,000

COLORADO
WELLS COMPLETED

24-26-28 Pinos, Kinney-Coastal Oil Co. 1 dry
5-1s-70 Martin, Essock Oil Co. 1..... dry
35-18-79 Watts, Continental Oil Co. 1... 150
7- 9-68 Dement, Union Oil Co. of California 1 150
18- 6-86 H. Dennis, Texas Prod. Co. 1... 80
34-3n-70 Prechtl, Left Hand Oil Co. 1.. abd
4-19-70 Kissinger and W. Continental Oil 1 ..... dry
3-19-70 Tork, W. F. McCormick 1..... dry
10-34-11 Aspaas, East Long Beach Oil Co. 1 ..... dry
28-20-69 Rolney, Travis, Vogel & Raddatz 17 135
3-19-70 Andy Smith, Continental Oil 1. dry
21-19-69 Hesaick, Lillian O.I Co. 1..... dry
19-10-69 Picco, F. P. January 1..... dry
12-34- 7 Ferguson, E. B. Klem Synd. 1. abd

Wells completed 14
Production 515
Dry and abandoned 10

UTAH
WELLS COMPLETED

27-41-19 Canyon, Utah Southern Oil 1.. dry
23- 5-22 Ashley Creek, Midwest Exploration Co. 3 ..... gas
34-25-21 Big Six, Embar Oil Co. 1..... dry
14-20-21 Cisco, Crystal Carbon Co. 6.... gas

Wells completed 4
Dry and abandoned 2
Gas production 31,000,000

MONTANA
WELLS COMPLETED

35-35-2 Byrne, Munger-Barr 6 25
33-33-2 McSweeney, C. P. Nash, trustee gas
18-34-1 Skinner, Oil Prod. Synd. 4.... dry
12-34-2 Steele, Ethridge Oil Co. 2 5000
33-35-1 Hawkins, Adams Co., Trus., 17. 15
9-34-1 Barger, Baker-Barnhill-Corcy 3 gas
9-34-1 Barger, Barger-Sunburst Co. 1 dry
18-34-1 Hannah, Hannah Porter 3 .... gas
32-35-1 Caine, "56" Pet. Corp. 38 10
24-34-2 Morton, L. M. R. Oils 1 50
29-35-2 Zimmerman, Minn. Pet. Co. 1.. 30
4-35-2 Baker, Ohio Oil Co. 14 45
8-34-1 Wilcox, Radford Oil Co. 2 .... dry
11-32-2 Compton, Nefstad-Edwards 1.. gas
29-35-2 Jarrett, A. E. Crumley 1 30
15-35-2 Emmert, Ohio Oil Co. 6 71
36-35-2 State, Texas Pac. C. & O. 46.. 35
39-33-1 Parker, North. Nat. Gas Co. 1 gas
1-32-2 Sunburst, Ohio Oil Co. 1 ..... gas
19-32-1 Riddle, Latah-Idaho 1 ..... gas
13-34-2 Craig, Hardrock Oil Co. 2 40
8-34-1 Wilcox, General Oil Co. 2 .... dry
27-35-3 McGowan, California Pet. 2 40
27-36-1 Riddle, Kevin-Flathead Oil Co. dry
5-25-1 Speer, Genou Oil & Gas 3 75
27-36-1 High Line Oil Co. 1 ..... dry
22-31-2 Commonwealth Pet. Co. 1..... dry
12-22-2 Mann, Allen Oil Co. 1 ..... dry

Wells completed 28
Production 5466
Gas 7
Dry 8

EASTERN FIELDS

Summary of Wells Completed

Fields—	Comp.	Prod.	Dry	Gas
Allegany	40	36	1	0
Bradford	107	256	0	0
Middle Field	3	9	0	0
Venango-Clarion	14	9	2	4
Butler-Armstrong	10	4	1	7
Southwest Pa.	7	3	2	4
West Virginia	44	88	10	24
Southeast Ohio	53	3,325	10	7
Total April	278	3,730	26	46
Total March	267	1,451	24	53
Difference	11	2,279	2	7

Summary of Work Under Way

Fields—	Rigs	Drilling	Total
Allegany	9	26	35
Bradford	30	79	109
Middle Field	0	6	6
Venango Clarion	1	11	12
Butler Armstrong	3	7	10

S. W. Pa.	6	17	23
West Virginia	25	105	130
S. E. Ohio	26	67	93
Total April	100	318	418
Total March	89	312	401
Difference	11	6	17

WELLS COMPLETED
ALLEGANY FIELD

Zimbaur, N. V. V. Franchot 1
Fee, Stephan, Gallets & Buffington 1
Multrus, C. M. Lippert et al 1
Fee, Mary Lippert 1
Fee, George H. Zink 1
Tract 1, Allegany, Hazelwood Oil 48 1
July 2 fee, Forest Oil Corp. 01 press
July 2 fee, Forest Oil Corp. 03 press
July 2 fee, Forest Oil Corp. 04 press
July 2 fee, Forest Oil Corp. 05 press
July 2 fee, Forest Oil Corp. 06 press
July 2 fee, Forest O l Corp. 09 press
July 2 fee, Forest Oil Corp. 011 press
July 2 fee, Forest Oil Corp. 012 press
July 2 fee, Forest Oil Corp. 014 press
July 2 fee, Forest Oil Corp. 015 press
July 2 fee, Forest Oil Corp. 016 press
July 2 fee, Forest Oil Corp. 018 press
July 2 fee, Forest Oil Corp. 021 press
July 2 fee, Forest Oil Corp. 2 1
July 2 fee, Forest Oil Corp. 4 1
July 2 fee, Forest Oil Corp. 5 1
July 2 fee, Forest Oil Corp. 7 1
Boyd & Jordan, L. E. Jordan 6 1
Richardson et al, L. H. and L. H. Thornton, agent 1
Fee, Cuba National Bank wtr
Fee, Phillips & Bartlett 1
Fee, Bradley Producing Corp. wtr
Fee, C. O. & W. O. Taylor 2
Fee, Bradley Producing Corp. et al 3
Fee, W. M. McEnroe et al 1
Fee, G. W. & P. Britell 1
Fee, R. D. & H. B. Thompson 1
Fee, LeSuer Oil Corp. 2
Fee, LeSuer Oil Corp. 3
McDermitt, J. B. Cochran et al 1
McDermitt, J. L. Cochran et al 4
Fee, Homestead Oil 3
Fee, O. W. & L. E. Perry 2
Fee, A. C. Oil Corp. dry

Wells completed 40
Production 36
Dry 1
Water and pressure 15

BRADFORD FIELD

Fee, Denwood Oil 4
Jack, H. F. & C. Jack 6
Morris, Minnich Bros. 1
Borden, C. J. Mitchell 2
Norton, Kahle Oil 2
Scio, C. A. Duke 2
Howard, Pressure Oil 3
Howard, Pressure Oil 3
Middaugh, A. L. & M. L. Lilly 2
Middaugh, A. L. & M. L. Lilly 2
Borden, W. B. Miller 1
Emerson, G. L. Rhodes et al 2
Duke, M. L. Boyle 3
Mantz, L. F. Kinley et al 5
Fee, George W. Smith est. 1
Fee, D. M. Hoffman est. 1
Fee, Penna Oil Prod. Ref. (2 wells) wtr
Riddell and Sco. Penn, Pollock et al 1
Fee, Mix Creek Oil 1
Fee, Mix Creek Oil wtr
Fee, Curtis & Dunlavey Bros. 10
Loop est., N. V. V. Franchot 5
Loop est., N. V. V. Franchot 6
Rounds, J. W. Kaufman 1
Fee, V. G. Smith 4
Fee, Grow Farm Oil 3
Fee, C. J. Mitchell 3
Keating, Fi st Nat. Bank Olean 5
Fee, D. J. Moody 2
Fee, Davis Oil 3
Fee, Davis Oil 4
Fee, Davis Oil wtr
Fee, D. J. Moody 2
Fee, L. G. Schenfield 2
Hawkins, Newton Smith 2
Hawkins, Newton Smith 3
Hawkins, Newton Smith press
Tyler fee, Forest Oil Corp. 203 1
Tyler fee, Forest Oil Corp. 205 1
Tyler fee, Forest Oil Corp. 83 1
July 4 fee, Forest Oil Corp 208 1
Niles fee, Forest Oil Corp. K-04 press
Niles fee, Forest O l Corp. K-011 press
Niles fee, Forest Oil Corp. K-012 press
Niles fee, Forest Oil Corp. K-016 press
Dent, South Penn Oil 120 1
Hamlin, South Penn Oil 115 1
Zimmer, South Penn Oil 113 2
Dent, South Penn Oil 121 1
Hamlin, South Penn Oil 114 1
Midland-Keating, South Penn Oil 50 1
Bing. 533, South Penn Oil 95 1
Culbertson lots, South Penn Oil 70 1
Culbertson lots, South Penn Oil 71 1
Bing. 439, South Penn Oil 108 1
Bing. 408, South Penn Oil 20 1
H. E. Smith, South Penn Oil 159 1
H. E. Smith, South Penn Oil 160 1
H. E. Smith, South Penn Oil 161 1
Tract 22, Hazelwood Oil 47 1
Bing. 536, Hooper & Co. 27 wtr
Bing. 386, Hooper & Co. 28 wtr
Bing. 329, Andrus & McDowell 116 wtr
Duke, M. L. Boyle et al 23 2
Duke, M. L. Boyle et al 24 1
Rew, Bova'd & Hamlin 24 1
Bing. 389, D. W. Daly 54 1
Bing. 422, T. H. Kennedy 161 3
Bing. 371, Lane No. 1 et al 18 5
Fee, South Penn Oil 1
E. J. Burns et al, Hall & Latimer 2
Redfield et al, South Penn Oil 2
Fee, South Penn Oil 10
Redfield et al, South Penn Oil 1
Park est., R. E. Hungville 2
Bingham, Brink & Brink 1
N. V. V. Franchot, W. C. Kennedy Co. 1
Fee, L. G. Dana 2
N. V. V. Franchot, Hooker et al wtr
Fee, Dana & Dana 3
Fee, R. O. Landers et al 8
N. V. V. Franchot, T. P. Thompson 1
N. V. V. Franchot, John Jackson 3
Fee, L. G. Dana 4
Earl E. Smith et al, Newton-Smith Oil wtr
Foster, Ellen Barry 2
Fee, W. C. Kennedy Co. 3
Fee, South Penn Oil 1
Bingham, Hazelwood Oil 3
Fee, Wm. C. Kennedy Co. 2
Fee, South Penn Oil 1
Fee, South Penn Oil 1
Bingham 499, South Penn Oil 4
Bingham 494, South Penn Oil 4
Bingham 533, South Penn Oil 1
Bingham 570, South Penn Oil 3
Bingham 188, Harris Oil 5
Williamson, Greer & Simpson 2
Fee, T. H. Kennedy 6 2
Bingham 439, South Penn Oil 5
Bingham 390, South Penn Oil 1
Bingham 439, South Penn Oil 10
Bingham 408, South Penn Oil 5
Bingham 582, Associated Producers 10
Bingham 577, C. P. Byron est. 4

Wells completed 107
Production 256
Water and pressure 14

MIDDLE FIELD

Lot 408, J. G. Cochran 49 4
Williams, South Penn 29 1
Lot 425, South Penn 32 4

Wells completed 3
Production 9

VENANGO-CLARION

Gray'll, D. N. Lewis & Co. 1 gas
Clark & Mong, Clark & Mong 3 1
Gharing, Manelle & Co. 45 1
Mill, National Pet. 18 1
Corbett & White, Corbett & White 10 1
Adams, Jones & Green et al 16 1
McElhatten, Johnson & McElhatten 1 dry
Whitling, Howard & Whitling 5 2
Beals, Master & Hell 14 1
O'Neil Bros., D. & H. O'Neil 10 dry
Reed, Keatley, McLane et al 6 gas
Black, W. A. Jeannerat 5 1
Cohlheep, Dempseytown Gas 1 gas
Wedekind, S. R. Lewis et al 4 gas

Wells completed 14
Production 9
Dry 2
Gas 4

BUTLER-ARMSTRONG

Wurtz, R. A. Marshall 1 1
Ringer, Columbia Nat. Gas 1 gas
Frederick, Frazer & Co. 1 gas
McDermott, G. McGill & Co. 9 gas
McCollough, McCollough Gas 2 gas
McBride, C. A. Fennell et al 3 gas
Strickline, Jacob Morris 1 gas
Dean, Mars Production 1 3
Wise, Columbia Nat. Gas 1 dry
Donnelly, Phillips O. & G. gas

Wells completed 10
Pordu tion 4
Dry 1
Gas 7

SOUTHWEST PENNSYLVANIA
WELLS COMPLETED
WASHINGTON COUNTY

Montgomery, New Oil & Gas Co. 1 dry

ALLEGHENY COUNTY

Bloom, Smith & Co. 2 gas
Dean, Dunlap & Co. 1 3
Campbell, Chemical O. & G. Co. 2 dry
Stiegerwald, Baeler & McEvoy 1 gas
Kahler, Marshall O. & G. Co. 3 gas

GREENE COUNTY

Johns, Vanvorhees & Co. 1 gas

Wells completed 7
Production 3
Dry 2
Gas 4
Rigs, 6; wells drilling, 17; total, 23.

WEST VIRGINIA
WELLS COMPLETED
HARRISON COUNTY

Thompson, Reserve Gas Co 1 1

MONONGALIA COUNTY

Moore, So.P.O.Co 3 3
Taylor, McCracken & Co. 2 gas

WETZEL AND TYLER COUNTIES

Morgan, So.P.O.Co. 17 dry
Freeland, Freeland Oil Co. 1 gas

DODDRIDGE COUNTY

Maxwell, Trainer & Co. 1 dry

RITCHIE COUNTY

Parks, Maxon Oil Co. 2 2
Goff, Delta Oil Co. 2 dry
Coleman, Murphy Oil Co. 2 dry
Hill, Hope C. & R. Co. 3 gas
Baker, Deem & Co. 1 dry
Jordoan, Hope C. & R. Co. 5 25
Wilson, So. P. O. Co. 11 10
Andrews, West Fork Oil Co. 3 8
Beall, Angle & Co. 1 gas

WIRT COUNTY

Badgett, Dailey Oil Co. 2 dry
Rathbone Oil Tract, Roberts Bros. 158 1

WOOD COUNTY

Ewing, Bickel & Son 1 dry

PLEASANTS COUNTY

Riggs-Brown, Douglass & Glenn 4 3
Poynter, Poynter O. & G. Co. 1 dry

ROANE COUNTY

Tallman, Heck Oil Co. 3 gas
Conley, Heck Oil Co. 13 10
Goff, G. L. Cabot 2 gas

CALHOUN COUNTY

Sturm, M. F. Crowley 1 gas
Stalnaker, P. F. McIntsk 1 dry
Bennett, W. H. Bickel 1 dry
Stalnaker, Hope Gas Co. 1 gas

LINCOLN COUNTY

Carmeans, C. C. Wolfe 1 gas
Puckett, L. R. Sweetland 30 gas
Woodell, L. R. Sweetland 31 gas
Stowers, Ray & Son 3 gas
Cooper, Russell Gas Co. 1 gas
Adkins, Mud River Gas Co. 1 gas

MINGO COUNTY

Closterman Est. Old Colony O. & G. Co 22 gas

BOONE COUNTY

Federal Coal Co., Pure Oil Co. 30 gas
Pond Fork Co., Yawkey O. & G. Co. 5 gas
Bias, Hope Gas Co. 1 gas
Linnig Hrs., Owens B. & M. Co. 2 gas
Miller, Owens B. & M. Co. 2 gas
Shonk, Shonk Land Co. 4 gas

CABELL COUNTY

Clark, Zogg O. & G. Co. 2 gas
Reynolds, Aetna O. & G. Co. 1 gas
McCallister, United F. & G. Co. 1 gas

WAYNE COUNTY

Osborne, Meabon & Huffman 1 25

Wells completed 44
Production 88
Dry 10
Gas 24
Rigs, 25; wells drilling, 105; total, 130.

SOUTHEAST OHIO
WELLS COMPLETED
PERRY COUNTY

H. V. P. Co., Chartiers Oil Co. 208 36
Kennan, D. McKeck trustee, 1 135
Griswold, Cline & Co. 1 345
Rodgers, The Wehrle Co. 1 dry
McClelland, The Wehrle Co. 1 170
Worthington, The Wehrle Co. 1 175
France, Wittmer Propertie 1 225
Kester, Wittmer Propertie 1 250
Young, Wittmer Propertie 1 25
Hankison, Hillside O. & G. Co. 1 140
Mead, Shanker, Bauman & Co. 1 195
Vosper & Co., Famous O. & G. Co. 1 240
Musk Pottery Co., Kachelmacher Est. 1 35
Brown, Bloomingville Oil Co. 1 35
Pickens, S. M. Bennett trustee 1 195
Springer, Stewart & Co. 1 145
Tysinger, Johnston & Co. 1 225
Burley-Winter, Howell & Co. 1 245
Crider, Miller, Jewell & Co. 1 dry
Brown, Wiser Oil Co. 1 dry

HOCKING COUNTY

Riggs, Berlin & Co. dry

HOLMES COUNTY

Shuy, The Kemrow Co. 2 gas
Birg, Empire G. & F. Co. 2 dry

GUERNSEY COUNTY

Dennis, Preston Oil Co. 2 50
Ridgley, Pure Oil Co. 6 5
Ruby, Davis Bros. Co. 2 20

LICKING COUNTY

Wright, Farmer & Rugg 1 9
Wright, Farmer & Rugg 2 8
Hillery, Farmer & Co 1 4
Settles, C. E. Settles & Co. 5 3
Noland, Brown & Co. 1 15
Shaw, Hope C. & R. Co. 2 15
Wiggins, G. L. Long 4 2
Chapin, Brown & Co. 4 4

FAIRFIELD COUNTY

McCullough, Linton & Co. 1 10

NOBLE COUNTY

Brotton, Sailing & Co. 5 10

ATHENS COUNTY

Wilson, Farmer O. & G. Co. 1 gas
Higgins, Gross & Co. 6 1

MEIGS COUNTY

Salser, Beea Oil Co. 3 dry
Wilson, Palmer & Co. 1 dry
Wells, Wheeler & Griffith 1 2
Burdette, Coal Hollow O. & G. Co. 5 3
Rutter, Liferight & Co. 1 gas

GALLIA COUNTY

Roush, Ohio F. S. Co. 3 gas
First, Ohio F. S. Co. 1 gas

WASHINGTON COUNTY

Breckenridge, Pure Oil Co. 18 dry
Watterson-Smith, Preston Oil Co. 2 dry
Davis, Yellowhouse O. & G. Co. 1 1
Palmer, Weir & Schramm 1 1
Hood, Schofield & Co. 1 gas

JEFFERSON COUNTY

Powell, Meeder & Co. 1 dry
Williams Sutton & Co. 5 25
Groves, Boyer & Co. 16 4

Wells completed 53
Production 3325
Dry 10
Gas 7
Rigs, 26; wells drilling, 67; total, 93.

CENTRAL OHIO FIELDS

COMPLETED WELLS
KNOX COUNTY

Brown—G. R. & A. M. Shira, Ohio Fuel Gas 2 gas

ASHLAND COUNTY

Mohican—J. M. Wolfe, J. H. Harmon & Co. 1 20
Orange—C. C. Rickett, Ohio Fuel Gas 1 gas
Greene—J. Kettering, Ohio Fuel Gas 2 gas
Clear Creek—R. P. Henderson, Brown, Shriver & Co. 1 dry
Troy—G. R. Motter, The Logan Gas 1 dry
Vermillion—M. A. Strine, Hawk & Co. 2 gas

Wells completed 6
Production 20
Dry 2
Gas 3

WAYNE COUNTY

Congress—R. B. Ferguson, Ohio Fuel Gas 1 dry
Canaan—C. W. Whitmore, The Logan Gas 1 gas

Wells completed 2
Dry 1
Gas 1

HOLMES COUNTY

Monroe—M. G. Bird, Empire Gas & Fuel 2 dry

COSHOCTON COUNTY

Newcastle—Cassingham, Cassingham & Bell Bros. 23 gas

CUYAHOGA COUNTY

Olmstead—C. J. Pond, Reeve & Loubshier 1 15
Emma L. McMahon, McGrath & Co. 1 gas
Dover—J. B. Harrison, Foster & Foster 3 gas

Wells completed 3
Production 15
Gas 2

GALLIA COUNTY

Addison—Albert Rush, Ohio Fuel Supply 1 gas

INDIANA

WELLS COMPLETED
ADAMS COUNTY

Wabash—A. G. Briggs, Wm. Kelly & Co. 1 8

RANDOLPH COUNTY

Stoney Creek—H. Miller, F. E. Reckew 1 dry

GIBSON COUNTY

Washington—J. Jones, Big Four Oil & Gas 1 70

PIKE COUNTY

Logan—Jas. S. Wilson, Miller, Davis & Co. 4 dry
Jas. S. Wilson, Miller, Davis & Co. 1 abd
Madison—L. M. Johnson, Murphy Oil 5 abd
S. H. Ingler, Perry Andrews & Co. 1 dry

Wells completed 2
Dry 2
Abandoned 2

DAVIESS COUNTY

Veale—J. C. Allison, G. H Danvers 1 dry

SULLIVAN COUNTY

Fairbanks—F. J. Harris, Hill & Co. 1 dry

ILLINOIS

WELLS COMPLETED
CLARK COUNTY

Johnson—Norman Bennett, W. C. McBride, Inc. 1 dry
Casey—James Rush, W. C. McBride Inc. 28 dry
Darwin—Martin Werna, unknown parties 1 dry

Wells completed 3
Dry 3

CRAWFORD COUNTY

Southwest—Dora Hipshire No. 2, The Ohio Oil Co. 3 3
Oblong—C. E. Henry, Densomoe Oil 11 gas

Wells completed 2
Production 2
Gas 1

LAWRENCE COUNTY

Dennison—Wesley Clark, Phippa, Blosser & Co. 1 35
Bridgeport—Robt. Middaugh, The Ohio Oil 2 abd

Wells completed 1
Production 35
Abandoned 1

WABASH COUNTY

Wabash—C. B. Kogan, McColpin & Co. 1 10
Ed Wright, Adams Corner Oil 1 dry

Wells completed 2
Production 10
Dry 1

MARSHALL COUNTY

Near Toluca—Irwin & Co. 1 dry

LIMA FIELDS

Summary of Field Operations

	Comp.	Prod.	Dry	Gas	Rigs.	Drg.	Ttl.
Wood	2	40	1	0	3	1	4
Hancock	1	0	0	1	0	2	2
Allen	2	35	0	0	2	1	3
Auglaize	0	0	0	0	0	5	5
Mercer	1	15	0	0	0	3	3
Van Wert	0	0	0	0	0	1	1
Seneca	4	500	1	0	2	3	5
Lucas	0	0	0	0	0	1	1
Shelby	1	0	1	0	0	1	1
Hardin	0	0	0	0	1	0	1
Darke	1	0	0	1	0	0	0
Total April	12	590	3	2	8	18	26
Total Mar.	11	214	1	1	5	22	27
Difference	1	376	2	1	3	4	1

WOOD COUNTY

Montgomery—J. Dicken, Ohio Oil 2, 4, 5, 6, 7 abd
F. E. Palmer, Ohio Oil 3, 4, 5 abd
G. W. Lamb, Ohio Oil 6 abd
Freedom—F. Wm. Damon, Hattie B. Gebert & Co. 4 abd
Loy Heine, C. R. Arters 8 abd
Henry—David F. Biehler, Ohio Oil 19 abd
Plain—B. R. Stratton, Hulse & Kundtz 8 abd
Bloom—T. J. Patterson, Clark A. Browning 20 40
Troy—Jim Briggs, Chas. F. Zelsing & Co. 1 dry

Wells completed 2
Production 40
Dry 1
Abandoned 13

HANCOCK COUNTY

Portage—J. H. King, Ohio Oil 1, 2, 4, 5, 6 abd
J. M. Cusac, Ohio Oil 2, 8, 12 abd
G. A. Mitchell, Ohio Oil 5 abd
E. DeRodes, L. D. Langmade 7 abd
Liberty—P. J. Reimund, Ohio Oil 4, 9 abd
H. P. Clark, Ohio Oil 13 abd
T. S. Barnhill, S. E. Price 7, 8, 10 abd
Allen—S. R. Huntington, Ohio Oil 7, 14 abd
Mation—A. Kraus, Ohio Oil 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28 abd
B. Sherick, Ohio Oil 22 abd
John Hays, Herman A. Bower 1 gas

Well completed 1
Gas 1
Abandoned 36

ALLEN COUNTY

Bath—Wm. H. Hall, B. L. Carman & Co. 3 10
Steve Zelno, W. W. Bolz 1 25

Wells completed 2
Production 35

AUGLAIZE COUNTY

Moulton—Wm Walker, Ohio Oil 1, 2 abd
C. Naumburg, Ohio Oil 3 abd

Wells abandoned 3

SANDUSKY COUNTY

Woodville—Standard Lime & Stone, Sandwich Bros. Drilling 2 abd
Jackson—Rinebold, R. J. Rinebold 3, 4, 6, 8 abd
T. J. Jackson, Jackson Oil 3 abd
Scott—A. Putnam, W. E. Dalton 1 abd

Wells abandoned 7

MERCER COUNTY

Union—Thos. Fireov.d, W. B. Lawrence & Co. 3 15

SENECA COUNTY

Clinton—Chas. Shaul, Geyer & Shaul 2 20
Liberty—John Swartzmiller, J. H. Murphy & Son 1 400
Jos. Sentelbatch, T. G. O'Brien 1 80
Dora Brubaker, Duncan, Roose & Milligan 1 dry

Wells completed 4
Production 500
Dry 1

SHELBY COUNTY

Loramie—M. A. & R. A. Dapore, The Ohio Oil 1 dry

DARKE COUNTY

Wayne—Marion Murphy, Lee A. Watson 1 gas

MICHIGAN
WELLS COMPLETED
MUSKEGON COUNTY

Muskegon—H. Hartman, Muskegon Development 1 150
J. N. Nichols, Joliet-Morris Development 1 200
Herman Heiz, Muskegon Oil Corp. 1 50
Taggert, A. S. Cochran 1 40
Figge, Dixie Oil A-1 110
Chas. Reeths, Dixie Oil 1 gas
G. H. Shoup, Reed Oil 1 10
H. Smith, Johnson O. & R. 1 8
Becker Bros., Citizens Petroleum 1 dry
Dow, Lake Shore Oil 1 dry

Wells completed 10
Production 560
Dry 3
Gas 1

SAGINAW COUNTY

Saginaw—Householder, F. W. Higginbotham, Trus. 1 dry

GRATIOT COUNTY

Elba—S. S. Mentor, The Sun Oil 1 dry

MONROE COUNTY

Dundee—Dusseau-Lapoint, Deerfield Oil Producing 1 72

Oklahoma-Kansas and Eastern Pipe Line Report

OKLAHOMA-KANSAS
Pipe Line Statement for March

Runs

Company—	Month Bbls.	Dly. Av. Bbls.
Prairie P. L. Co.*	4,371,000	141,000
Gulf P. L. Co.	1,306,253	42,137
Texas P. L. Co.	1,142,479	36,854
Magnolia Pet. Co.	2,205,763	71,154
Empire P. L. Co.	811,148	26,166
Cosden P. L. Co.	888,890	28,674
Sinclair P. L. Co.	2,673,750	86,250
Oklahoma P. L. Co.	3,029,429	97,724
Other lines	7,099,000	229,000
Total March	23,527,712	758,959
Total February	22,554,253	777,733
Difference	973,459	18,974

Shipments

Prairie P. L. Co.†	5,253,096	169,455
Gulf P. L. Co.	1,321,952	42,644
Texas P. L. Co.	1,171,394	37,787
Magnolia Pet. Co.	1,873,776	60,440
Empire P. L. Co.	821,540	26,501
Cosden P. L. Co.	941,397	30,368
Sinclair P. L. Co.†	2,886,727	93,088
Oklahoma P. L. Co.	2,875,574	92,760
Other lines	7,688,000	248,000
Total March	24,832,456	801,043
Total February	23,542,339	811,003
Difference	1,290,117	9,960

Stocks

	Bbls.
Prairie O. & G. Co.	33,520,000
Prairie P. L. Co.	2,500,000
Gulf P. L. and Gypsy Oil Cos.	10,205,075
The Texas Company	6,752,953
Magnolia Pet. Co.	7,973,596
Empire P. L. Co.	4,251,758
Mid-Continent Pet. Corp.	3,556,338
Sinclair Crude Oil Pur. Co.	19,950,000
Carter Oil Co.	14,278,140
Oklahoma P. L. Co.	3,203,326
Other lines	11,900,000
Total March	118,091,186
Total February	117,934,469
Difference	156,717

*Estimated. †Prairie P. L. shipments include Texas crude oil and Sinclair shipments include Texas and Wyoming crude oil.

NOTE—Stocks do not include approximately 8,000,000 bbls. of crude oil held in storage on private tank farms and leases and approximately 1,400,000 bbls. of Texas Panhandle crude oil in storage in Oklahoma.

EASTERN PIPE LINE REPORT
Runs From Wells

In the following table will be found the regular receipts from wells by various pipe lines in New York, Pennsylvania, West Virginia, Ohio, Kentucky and Indiana for February and March:

	Feb., '28	Mar., '28
Nat. Transit	150,792.56	170,381.24
S. W. P. P. L.	86,300.70	96,738.67
Eureka P. L.	358,514.02	395,925.46
Buckeye P. L. (Macksburg)	336,290.24	363,109.67
Buckeye P. L. (Cleve.)	10,650.78	11,122.25
Buckeye P. L. (Lima, etc.)	108,503.36	120,274.94
Indiana P. L.	6,990.90	6,526.96
Cumberland P. L.	216,913.65	231,081.93
N. Y. Transit	20,961.60	24,499.36
Tidewater P. L.	179,353.35	181,399.11
Pure Oil	64,170.62	67,517.94
Emery P. L.	54,952.72	57,577.93
Paragon Dev.	46,564.77	85,979.26
Stoll Oil Ref.	12,100.29	.....
Total	1,653,059.46	1,782,134.72
Daily average	57,002.05	57,488.22

Note—Indian Refining Co. also reported other receipts of 347,281.21 bbls. Paragon Refining Co. had other receipts of 197,794.26 bbls. Paragon Development had other receipts of 2,317.25 bbls.

Petroleum Deliveries

The following tables exhibit the shipments or regular deliveries of various pipe lines in New York, Pennsylvania, West Virginia, Ohio, Kentucky and Indiana for February and March.

	Feb., '28	Mar., '28
Nat. Transit	550,710.53	548,681.98
S. W. Pa. P. L.	300,851.13	438,196.09
Eureka P. L.	92,771.88	205,994.31
Buckeye P. L. (Macksburg)	134,030.96	158,472.81
Buckeye P. L. (Cleve.)	978.44	976.93
Buckeye P. L. (Lima, etc.)	1,301,510.04	960,869.54
Indiana P. L.	1,160,002.87	1,240,186.42
Cumberland P. L.	127,571.67	144,935.24
N. Y. Transit	149,006.60	145,403.04
Northern P. L.	163,752.84	176,203.73
Tidewater P. L.	143,951.23	194,170.85
Pure Oil	63,494.40	69,549.77
Emery P. L.	54,814.47	54,304.29
Paragon Ref.	167,179.39	193,052.03
Indian Ref.	307,199.80	358,460.97
Paragon Dev.	45,839.18	57,926.14
Total	4,853,665.43	4,956,385.14
Daily average	167,367.77	159,883.39

Gross Stocks

The gross stocks held by various pipe lines in the oil-producing sections of New York, Pennsylvania, West Virginia, Ohio, Indiana and Kentucky at the close of February and March:

	Feb., '28	Mar., '28
Nat. Transit	1,123,231.06	1,156,703.69
S. W. Pa. P. L.	756,131.52	656,661.49
Eukera P. L.	1,782,756.00	1,590,080.78
Buckeye P. L. (Macksburg)	424,216.38	413,024.91
Buckeye P. L. (Cleveland)	55,006.63	44,540.16
Buckeye P. L. (Lima, etc.)	4,763,213.91	4,776,825.13
Indiana P. L.	695,467.72	778,310.93
Cumberland P. L.	650,094.40	668,275.42
Southern P. L.	383,995.42	502,604.64
N. Y. Transit	808,998.76	921,342.77
Northern P. L.	537,565.25	531,081.55
Pure Oil	60,918.70	59,985.11
Emery P. L.	7,916.48	12,409.42
Paragon Refining	20,811.72	25,285.68
Indian Refining	10,031.11	11,874.10
Paragon Devel.	100,463.76	90,719.69
Total	12,180,418.82	12,239,725.47
Increase	96,290.94	59,306.65

Grades of Oil

The following table shows the amount of the different grades of oil held by the Eastern Pipe Lines at the close of February and March, showing the gross stocks of the above fields:

	Feb., '28	Mar., '28
Pennsylvania	3,821,514.45	3,755,332.90
Lima	762,432.37	836,291.60
Kentucky	1,049,761.11	1,059,426.47
Mid-Continent	6,460,176.14	6,539,436.81
Illinois	86,534.75	49,237.69
Total	12,180,418.82	12,239,725.47

Daily Average Runs

The following table shows the daily average runs of the Pennsylvania, Lima and Kentucky oil fields for the past four years:

	1925	1926	1927	1928
January	56,831	55,630	56,209	52,904
February	60,606	60,594	61,298	57,002
March	60,575	61,644	63,247	57,485
April	63,062	63,019	60,337	.....
May	59,217	60,580	60,284	.....
June	61,270	61,131	62,757	.....
July	62,639	63,206	58,674	.....
August	59,686	61,815	60,870	.....
September	62,510	64,639	60,285	.....
October	145,388	161,132	147,036	.....
November	59,350	61,774	57,275	.....
December	57,974	58,755	53,089	.....

Daily Average Shipments

The following table gives daily average shipments from the Pennsylvania, Lima and other fields for the past four years:

	1925	1926	1927	1928
January	157,889	156,056	141,227	146,465
February	160,863	159,488	138,534	167,368
March	154,591	150,239	133,777	159,883
April	151,429	152,371	140,227	.....
May	146,995	160,998	144,594	.....
June	149,467	160,257	149,772	.....
July	161,338	160,045	151,850	.....
August	161,730	151,929	188,653	.....
September	156,719	158,915	144,213	.....
October	145,388	161,132	147,036	.....
November	143,582	152,608	150,975	.....
December	150,162	136,428	144,504	.....

Gross Stocks

In the following table will be found the gross stocks of the various lines of the Pennsylvania, Lima and Kentucky oil fields, including oil received from other lines at the close of each month for the past three years:

	1926	1927	1928
January	9,859,170	9,718,008	12,276,710
February	9,579,354	10,119,162	12,180,419
March	9,438,292	10,794,044	12,239,725
April	9,805,851	11,112,295	.....
May	9,531,757	11,359,381	.....
June	9,585,904	11,493,673	.....
July	9,734,687	11,468,128	.....
August	9,055,947	11,989,115	.....
September	9,436,732	12,212,716	.....
October	9,269,806	12,047,661	.....
November	9,257,067	11,939,740	.....
December	9,454,512	12,340,297	.....

Franklin Pipe Line Co.

The following table exhibits the condition of the Franklin Pipe Line at the close of business for the months named and not counted in the stocks and averages reported above:

	Runs	Shipments	Stocks
1926—			
March	2,587.20	1,878.56	16,664.96
April	2,834.23	1,512.65	17,986.54
May	2,708.40	539.29	20,215.73
June	2,946.29	664.40	22,497.61
July	3,153.39	1,276.61	24,374.89
August	3,057.89	3,713.11	18,719.17
September	3,309.56	2,656.48	19,372.25
October	2,801.32	1,226.99	20,946.58
November	2,746.50	2,220.63	21,472.55
December	2,779.96	1,893.69	22,358.72
1928—			
January	1,886.06	2,424.79	21,819.99
February	2,460.14	3,109.34	21,170.79
March	2,578.86	3,540.33	20,209.33

The Illinois Field

The following table gives the report of the Illinois Pipe Line Co. in Illinois:

Gross stock, April 1	2,260,408.44
Runs from wells	656,684.41
Other receipts	488,152.56
Regular deliveries	465,053.26
Other deliveries	654,958.95

The amount of Illinois oil run by the Tidewater Pipe Co. in March was 68,566.41 bbls., and deliveries were 55,542.43 bbls. Adding these figures to those of the Illinois Pipe Line Co. makes the runs and deliveries as follows:

	Runs	Deliveries
1927—		
March	727,593.94	554,947.42
April	598,226.97	444,818.49
May	728,759.40	543,192.93
June	640,975.85	532,217.78
July	613,961.30	484,902.53
August	661,276.40	529,331.37
September	619,589.49	433,212.49
October	601,099.25	408,287.58
November	605,621.14	415,185.06
December	577,321.25	397,176.07
1928—		
January	561,769.57	434,147.02
February	573,619.78	450,217.81
March	725,250.82	520,595.69

Tidewater Pipe Co., Ltd., also delivered in March, 232,980.84 bbls. of Oklahoma oil

AVERAGE DAILY RECEIPTS OF CALIFORNIA OIL AT ATLANTIC AND GULF COAST PORTS

Average bbls. per day—	Atlantic Ports: Baltimore	Boston	New York	Philadelphia	Others	Total	Gulf Coast Ports: Galveston	New Orleans Port Arthur Baton Rouge Sabine Pass	Tampa	Total	Total All Ports
November	9,423	2,823	23,033	15,166	4,933	55,400	.....	.....	.....	.....	55,400
December	10,742	3,033	30,258	24,387	7,065	75,484	.....	.....	.....	3,613	79,097
January	15,387	3,033	31,032	7,452	9,710	66,613	.....	.....	.....	.....	66,613
February	3,588	.....	21,980	19,734	10,230	55,532	.....	.....	.....	.....	55,532
March	8,065	2,258	11,807	10,065	5,258	37,452	.....	.....	.....	.....	37,452

AVERAGE DAILY IMPORTS OF PETROLEUM AT PRINCIPAL UNITED STATES PORTS

Average bbls. per day—	Atlantic Ports: Baltimore	Boston	New York	Philadelphia	Others	Total	Gulf Coast Ports: Galveston	New Orleans Port Arthur Baton Rouge Sabine Pass	Tampa	Total	Total All Ports
November	35,233	3,033	84,533	30,100	27,067	184,967	4,000	26,500	2,000	1,667	34,167	219,133
December	39,968	2,387	78,968	19,097	29,836	170,258	2,580	15,356	839	1,226	20,000	190,258
January	15,226	4,323	107,645	27,871	39,774	194,839	5,000	32,516	.....	1,355	38,871	233,710
February	6,796	5,175	108,236	29,532	28,867	178,536	7,831	22,114	6,555	2,829	39,329	217,865
March	22,839	3,968	112,323	45,516	33,516	218,161	7,419	13,291	6,645	1,903	29,258	247,419

GROSS PRODUCTION IN UNITED STATES FOR 12 MONTHS (REVISED)
(In Barrels)

		California	Oklahoma	Texas	Kansas	Arkansas	Louisiana	Rocky Mountains	Eastern Fields	Total
1927—										
April:	Month	19,493,825	22,208,130	17,755,920	3,516,930	3,378,240	2,039,550	2,671,830	3,474,000	74,538,425
	Daily average	649,794	740,271	591,864	117,231	112,608	67,985	89,061	115,800	2,484,614
May:	Month	19,506,054	23,258,463	19,489,607	3,704,314	3,493,669	1,984,651	2,682,151	3,467,000	77,585,909
	Daily average	629,228	750,273	628,697	119,494	112,699	64,021	86,521	111,839	2,502,771
June:	Month	19,181,442	22,830,330	18,360,450	3,437,580	3,365,760	1,920,180	2,634,570	3,330,000	75,060,312
	Daily average	639,381	761,011	612,015	114,586	112,192	64,006	87,819	111,000	2,621,189
July:	Month	19,319,021	26,522,546	17,580,348	3,454,082	3,406,683	2,311,019	2,678,679	3,363,300	78,635,678
	Daily average	623,194	855,566	567,108	111,422	109,893	74,549	86,409	108,484	2,536,635
August:	Month	19,279,131	26,283,350	17,582,927	3,442,240	3,242,600	2,231,202	2,489,021	3,571,000	78,221,471
	Daily average	621,907	847,850	570,417	111,040	104,600	71,974	80,291	115,194	2,522,373
September:	Month	19,064,500	24,111,660	18,322,800	3,241,340	3,032,970	2,027,070	2,268,630	3,465,000	75,633,970
	Daily average	635,483	803,722	610,760	111,378	101,099	67,569	75,621	111,774	2,521,132
October:	Month	19,448,893	24,247,053	19,200,098	3,509,169	3,117,293	2,058,889	2,258,885	3,400,000	77,240,286
	Daily average	627,384	782,163	619,358	113,199	100,555	66,416	72,867	109,677	2,491,622
November:	Month	18,516,467	23,033,380	18,628,290	3,313,650	2,906,760	1,956,960	2,234,730	3,302,500	73,942,737
	Daily average	617,216	769,446	620,943	110,455	96,892	65,232	74,491	110,083	2,464,758
December:	Month	18,938,823	32,208,417	19,840,009	3,427,174	2,962,750	1,927,148	2,400,578	3,219,900	74,924,799
	Daily average	610,930	716,400	640,000	110,554	95,576	62,166	77,438	103,868	2,416,926
1928—										
January:	Month	19,038,228	21,146,619	20,023,156	3,219,325	2,791,891	1,889,196	2,429,275	3,133,000	73,710,700
	Daily average	613,814	682,149	645,876	107,075	90,061	59,326	78,360	101,000	2,377,765
February:	Month	18,038,459	19,483,157	19,682,889	3,079,887	2,571,575	1,769,606	2,230,910	3,016,000	69,862,483
	Daily average	622,016	671,833	678,718	106,203	88,675	60,676	76,918	104,000	2,409,039
March	Month	19,118,320	20,162,524	21,466,632	3,379,031	2,687,948	1,871,160	2,401,911	3,518,500	74,606,026
	Daily average	616,720	650,404	692,472	109,001	86,708	60,360	77,481	113,500	2,406,646
Total 12 months		228,933,163	275,545,629	225,033,126	40,924,722	36,958,144	23,926,541	29,421,270	40,259,700	903,962,795

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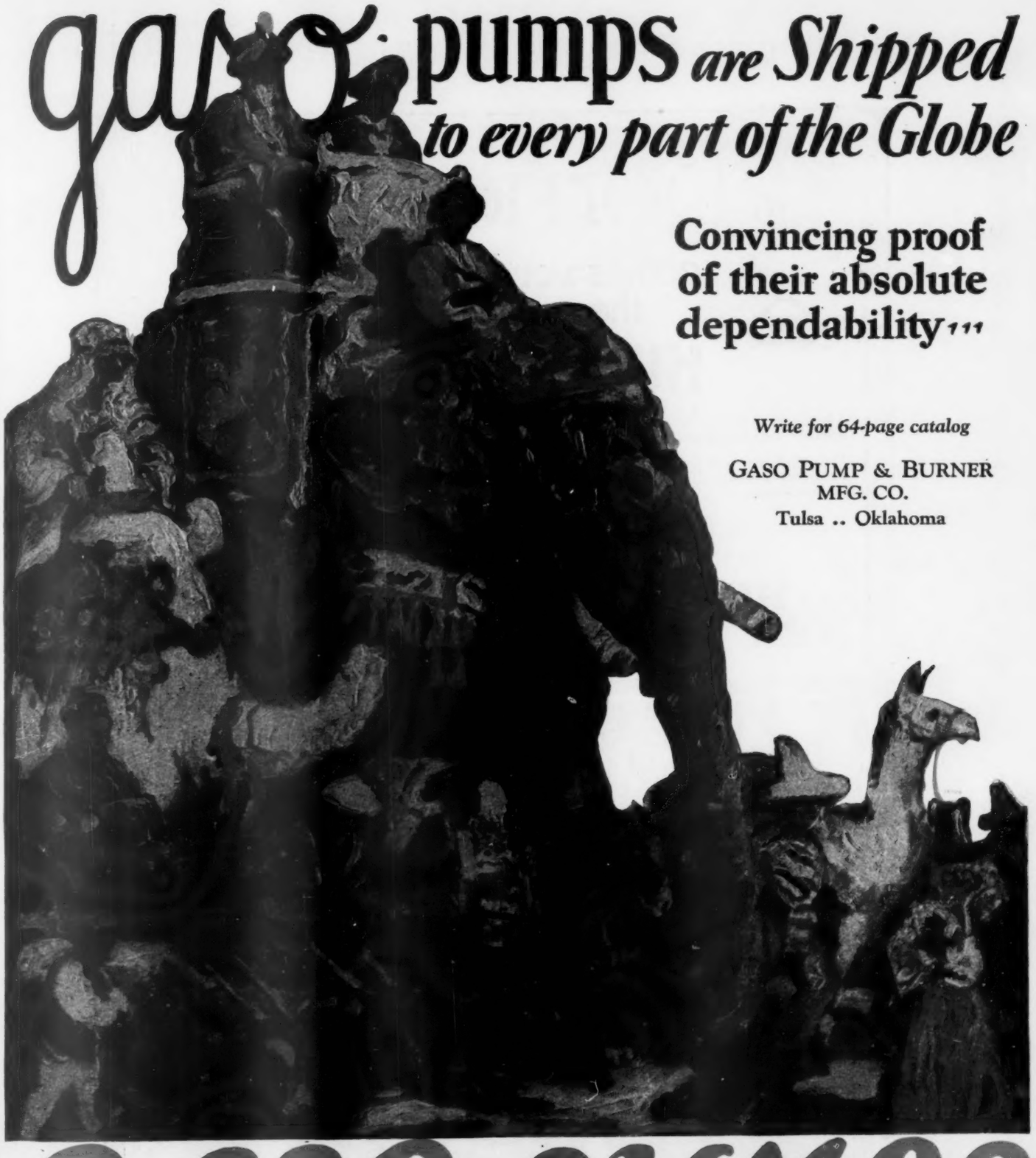

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